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# San Bernardino County

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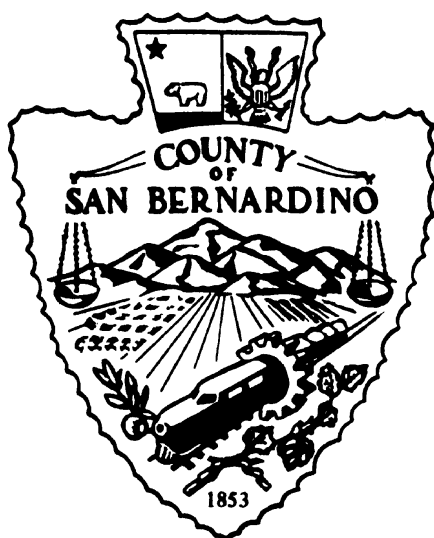
# AIDS Program Report

<http://www.co.san-bernardino.ca.us/pubhlth/html/reports/aids/title.htm>

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**AIDS/HIV Disease Reported Through December 31, 1998**

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## Introduction

This report was originally developed to provide the public, educators, physicians and other service providers with an epidemiologic description of the acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection in San Bernardino County. Over time, it has grown to include more than 75 figures and tables, a brief history of the county, choroplethic maps and descriptions of other HIV-related services provided by the San Bernardino County Department of Public Health and others.

Specifically, the report includes a brief history and geographic description of the county; a sociodemographic profile of the population by health planning region; and discussions of reported AIDS cases by selected demographic variables with analyses over time. It also includes a mortality analysis, an estimate of the number of persons living with HIV, years of potential life lost due to AIDS, leading causes of death for San Bernardino County residents and a discussion of the economic impact of the epidemic. The report contains data describing the clients who receive outpatient primary medical care from the Department of Public Health. It also includes a description of anonymous and confidential HIV antibody counseling and testing programs; blinded seroprevalence studies such as that for child bearing women; and screening programs for blood donors and military recruits. Finally, it includes a discussion of other diseases/conditions of possible relevance to the HIV epidemic, the AIDS Drug Assistance Program (ADAP), Housing Opportunities for Persons with AIDS (HOPWA), and prevention education efforts within the county.

## History and Geography

San Bernardino County is located in the inland portion of Southern California (see figure 1) and is geographically the largest county in the contiguous United States. It originally constituted the eastern portion of Los Angeles County. However, on April 26, 1853, the Senate and Assembly of the State of California approved the division of Los Angeles County, "beginning at a point where a due south line drawn from the highest peak of the Sierra de Santiago intersects

the northern boundary of San Diego County; thence running along the summit of said Sierra to the Santa Ana river, between the ranch of Sierra and residence of Bernardo Yorba; thence across the Santa Ana river along the summit of the range of hills, that lie between the Coyotes and Chino, (leaving the ranches of Ontiveras and Ybana to the west of this line) to the southeast corner of the ranch of San Jose; thence along the eastern boundaries of said ranch and of San Antonio, and the western and northern boundaries of Cucamonga ranch and the ravine of Cucamonga; thence up said ravine to its source in the coast range; thence due north to the northern boundary of Los Angeles County; thence northeast to the State line; thence along the State line to the northern boundary line of San Diego County; thence westerly along the northern boundary of San Diego to the place of beginning." In 1893, Riverside County was formed from the southern section of San Bernardino County and the northern portion of San Diego County. San Bernardino County currently covers 20,164 square miles and is larger than the combined land masses of New Jersey, Massachusetts, Delaware, and Rhode Island.



**FIGURE 1. Map of the State of California with San Bernardino County shaded.**

San Bernardino County is bordered on the north by Inyo County, the northeast by the state of Nevada, the east by the state of Arizona, the south by Riverside County, the southwest by Orange County and the west by Los Angeles and Kern counties.

## 2 San Bernardino County

The county has diverse geographical features including the vast Mojave Desert, San Bernardino National Forest and San Gorgonio Wilderness Area; numerous desert valleys (Cadiz, Chemehuevi, Ivanpah, Lucerne, Mesquite, Piute, Searles, Shadow, Summit, Superior, Victor and Ward); extensive mountain ranges (Bristol, Bullion, Cady, Granite, Kelso, Mesquite, Newberry, Quail, Sacramento, San Bernardino, Old Woman and Owlshead) and a number of lakes (Arrowbear, Arrowhead, Big Bear, Green Valley, Gregory and Silverwood). Its eastern border is defined by the Colorado River. The county has all five major climatic zones from low desert to alpine. The county's lowest point is in Death Valley (282 feet below sea level) and its highest peak is San Gorgonio Mountain (11,502 feet above sea level).

### Department of Public Health

The San Bernardino County Board of Supervisors became legally authorized for health administration in 1872. A county health officer was first permitted in 1897 and made mandatory in 1909. The Department of Public Health was established in 1931. The Department conducts a comprehensive public health program which includes services mandated by the state, a substantial range of public health-related personal health services, and a number of county regulatory programs. The Department is divided into four divisions; Preventive Medical Services, Community Health Services, Environmental Health Services, and Administrative Services. The divisions are further subdivided into 23 sections and 36 programs. A categorical AIDS Program was established in 1988 and is housed within the Disease Control Section of the Division of Preventive Medical Services.

### Sociodemographic Profile

According to 1990 census data, San Bernardino County's 1,418,380 residents ranked fifth in terms of population among California counties and sixteenth among those within the United States. The median annual income in 1989 for San Bernardino County residents was \$36,977. Thirteen percent of the total population within the county lived below the poverty level. Ninety-three percent of the population resided in urban areas and 7% resided in rural areas. The 1998

estimated mid-year population for San Bernardino County was 1,645,800 (source: California Department of Finance). This represents a 16% increase when compared with 1990 census data.

There are 2,656 physicians, 18 acute care hospitals and 5 licensed community clinics within San Bernardino County.

San Bernardino County's borders embrace more than 50 urban centers, suburban cities, and rural and remote communities. For the purposes of health planning, the county has been divided into three regions. The east valley and west valley health planning regions are located in the extreme southwest corner of the county while the desert region constitutes the remainder. Table 1 presents the cities/communities within San Bernardino County by health planning region.

**TABLE 1. Cities/communities by health planning region, San Bernardino County**

San Bernardino County		
East Valley	West Valley	Desert
Big Bear City	Alta Loma	Adelanto
Big Bear Lake	Chino	Apple Valley
Bloomington	Chino Hills	Baker
Blue Jay	Etiwanda	Barstow
Cedar Glen	Fontana	Earp
Colton	Montclair	Helendale
Crestline	Ontario	Hesperia
Crestpark	Rancho Cucamonga	Joshua Tree
Devore	Upland	Landers
Erwin Lake		Lucerne Valley
Forest Falls		Morongo Valley
Grand Terrace		Needles
Highland		Newberry Springs
Lake Arrowhead		Phelan
Loma Linda		Pinon Hills
Lytle Creek		Trona
Mentone		Twentynine Palms
Redlands		Victorville
Rialto		Wonder Valley
Rimforest		Wrightwood
Running Springs		Yermo
San Bernardino		Yucca Valley
Skyforest		
Sugarloaf		
Twin Peaks		
Yucaipa		

Table 2 shows that there are differences among the three health planning regions of San Bernardino County. Based on 1990 census data, the east valley had a greater proportion of African Americans (10%) than did the west valley and desert region (7% and 6%, respectively). The west and east valley regions had substantially greater proportions of Latinos (32% and 27%, respectively) than did the desert region (16%). The west and east valley regions had a greater proportion of Asian/Pacific Islanders (5% and 4%, respectively) than did the desert region (2%).

**TABLE 2. Sociodemographic profile by health planning region, San Bernardino County, 1990**

	East Valley		West Valley		Desert		Total	
Male	272,329	49%	279,422	50%	159,056	51%	710,807	50%
Female	280,970	51%	274,882	50%	151,721	49%	707,573	50%
<b>Total</b>	<b>553,299</b>		<b>554,304</b>		<b>310,777</b>		<b>1,418,380</b>	<b>100%</b>
Caucasian	319,508	58%	311,135	56%	231,470	74%	862,113	61%
Latino	152,025	27%	175,931	32%	50,617	16%	378,573	27%
African American	55,346	10%	36,101	7%	17,724	6%	109,171	8%
Asian/Pacific Islander	21,381	4%	27,022	5%	6,984	2%	55,387	4%
Native American	3,858	1%	2,575	<1%	3,585	1%	10,018	1%
Other	1,181	<1%	1,540	<1%	397	<1%	3,118	<1%
<5	53,545	10%	55,419	10%	29,378	9%	138,342	10%
5-9	49,984	9%	51,000	9%	28,065	9%	129,049	9%
10-14	43,311	8%	44,577	8%	24,050	8%	111,938	8%
15-19	39,305	7%	41,391	7%	21,431	7%	102,127	7%
20-24	42,014	8%	45,587	8%	24,582	8%	112,183	8%
25-34	102,579	19%	114,925	21%	54,461	18%	271,965	19%
35-44	80,685	15%	89,752	16%	42,570	14%	213,007	15%
45-54	48,203	9%	47,905	9%	26,262	8%	122,370	9%
55-64	37,936	7%	30,280	5%	24,283	8%	92,499	7%
65-74	32,083	6%	20,901	4%	22,732	7%	75,716	5%
75-84	17,922	3%	9,893	2%	10,592	3%	38,407	3%
85+	5,732	1%	2,674	<1%	2,371	1%	10,777	1%
Med Household Income	\$25,533 - \$45,127		\$33,084 - \$58,030		\$22,429 - \$34,050			
Proportion with high school diploma or higher (25+ years old)	74.7%		75.8%		75.9%			
Proportion with bachelor's degree or higher (25+ years old)	16.8%		15.5%		10.6%			
Proportion in labor force among persons 16 years and older	63.6%		69.8%		61.3%			
Proportion unemployed among persons 16 years and older	8.4%		6.2%		9.5%			

The desert and east valley regions had greater proportions of adults over the age of 55 (19% and 17%, respectively) than did the west valley (11%).

The west valley was the wealthiest in terms of annual median household income. The proportions of people with high school diplomas were comparable across all health planning regions. The proportions of those with bachelors degrees were comparable for the west and east valley regions (17% and 16%, respectively) while that for the desert was lower (11%). The proportion employed was highest in the west valley (70%) while those for the east valley (64%) and desert (61%) were comparable. It followed that the rate of unemployment was lowest in the west valley (6%) and higher in the east valley (8%) and desert regions (10%).

## The Epidemic

The first cases of the Acquired Immunodeficiency Syndrome (AIDS) reported in the United States were described in the June 5, 1981 issue of the *Morbidity and Mortality Weekly Report*. Since then, AIDS has emerged as what might be the

most significant communicable disease epidemic of the twentieth century.

Table 3 provides some indication of the impact of the epidemic on the United States, New York, California and selected California counties. The federal government considers Riverside and San Bernardino counties as a single metropolitan area (MA) for the purposes of counting cases of AIDS and allocating funds for HIV-related health and support services. The number of cases reported within the Riverside-San Bernardino MA ranks 22nd among the 100 MAs recognized by the Centers for Disease Control and Prevention (CDC).

**TABLE 3. Cumulative AIDS cases for selected jurisdictions, 1981 – December 31, 1998**

United States	688,200
New York	128,675
California	110,056
Los Angeles County	38,670
San Francisco County	26,332
San Diego County	9,643
Alameda County	7,447
Riverside – San Bernardino counties	6,199
Orange County	5,116
Santa Clara County	2,883
Sacramento County	2,931
Kern County	876

Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 1998;10 (no. 2):8-11]

The cases presented in table 4 are reported by county of residence at diagnosis and do not necessarily reflect the number of people living with AIDS in San Bernardino and Riverside Counties. The 2,503 cases reported by San Bernardino County rank ninth among the 58 California counties.

**TABLE 4. Cumulative AIDS Cases for Riverside and San Bernardino Counties, 1983–December 31, 1998**

Riverside County	3,749	60%
San Bernardino County	2,503	40%
Community	2,110	
Institutional	393	
<b>Total</b>	<b>6,252</b>	<b>100%</b>

## Community AIDS Cases

Community cases are defined as persons with one or more AIDS defining conditions who lived in San Bernardino County at the time of their initial diagnosis. They do not include those incarcerated within state prisons or hospitals.

San Bernardino County reported its first case of AIDS in 1983. Since that time, 2,110 community cases have been reported. One hundred and fifty-nine cases of AIDS were reported between January 1, 1998 and December 31, 1998.

The age distribution of persons diagnosed with AIDS in San Bernardino County (see table 5) is similar to that of the United States (Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 1998;10 no. 2: [16]).

**TABLE 5. Community AIDS cases by age group, San Bernardino County, 1983–December 31, 1998**

<5	27	1%
5-12	10	<1%
13-19	13	1%
20-29	421	20%
30-39	920	44%
40-49	493	23%
50+	226	11%
<b>Total</b>	<b>2,110</b>	<b>100%</b>

**TABLE 6. Community AIDS cases by race/ethnicity, San Bernardino County, 1983–December 31, 1998**

Caucasian	1,089	52%
Latino	556	26%
African American	425	20%
Asian/Pacific Islander*	25	1%
Native American	15	1%
<b>Total</b>	<b>2,110</b>	<b>100%</b>

\*8 Filipino, 2 Vietnamese, 1 Chinese, 1 Indonesian, 2 Japanese, 1 Korean, 3 Thai, 2 Tongan, 5 Unspecified

The number of cases among Caucasians in San Bernardino County is 2.6 times that reported among African Americans and 2.0 times that identified among Latinos (see table 6).

The racial/ethnic distribution of San Bernardino County community cases differs from that for the United States. Fifty-two percent of the local cases have occurred among Caucasians while the corresponding proportion for the United States is 44% (Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 1998;10 no. 2: [16]). Twenty-six percent of the San Bernardino County community cases have occurred among Latinos while 18% of the national cases have been reported among this racial/ethnic group. Twenty percent of the local cases have been African American in contrast to 37% of the nation's cases. The local proportions of Asian/Pacific Islander and Native American cases are similar to those for the nation.

One thousand seven hundred and ninety-seven (85%) of the 2,110 community AIDS cases have occurred among males (see table 7) and 313 (15%) have been female (see table 8). These proportions are comparable to national data (Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 1998;10 no. 2: [14]).

The risk profile for San Bernardino County adult/adolescent male community AIDS cases is similar to that of cases reported throughout the United States with the exception of the proportions associated with injection drug use (IDU) alone and sex between men. Twenty-two percent of the nation's adult male cases have been attributed to IDU alone (Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 1998;10 no. 2: [14]) compared to 13% in San Bernardino County. Sixty-five percent of the local male cases have been associated with sex between men while 57% of the national male cases have shared the same risk factor. The national and local proportions of male cases associated with sex between men in addition to IDU, heterosexual contact, transfusions, perinatal transmission, and receipt of factor concentrate are similar.

The risk profile for adult/adolescent female community AIDS cases in San Bernardino County is different from that of the United States. Forty-three percent of the nation's female cases have been associated with IDU alone (Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report*, 1998;10 no. 2: [14]) compared with 31% of San Bernardino

**TABLE 7. Male community AIDS cases by probable source of infection and race/ethnicity, San Bernardino County, 1983–December 31, 1998**

Probable Source of Infection	Race/Ethnicity					Total	Row%
	Caucasian	Latino	African Am	Asian/Pac	Native Am		
Sex between men	694	286	175	14	8	1,177	65%
Injection drug use	92	76	71	2	0	241	13%
Sex between men/IDU	107	51	33	0	4	195	11%
Heterosexual, partner IDU	16	23	6	0	0	45	3%
Receipt of factor concentrate	20	11	0	4	0	35	2%
Transfusion	16	6	1	1	1	25	1%
Heterosexual, partner HIV+	8	2	9	1	1	21	1%
Perinat. mother IDU	0	0	5	0	0	5	<1%
Perinat. mother sex c IDU	1	0	2	0	0	3	<1%
Perinat. mother sex c HIV+	1	1	0	0	0	2	<1%
Perinat. mother HIV+	0	1	0	0	0	1	<1%
Perinat. mother sex c bisexual	1	0	0	0	0	1	<1%
Perinat. mother transfused	0	1	0	0	0	1	<1%
No history obtained/unknown	13	18	12	1	1	45	3%
<b>Total</b>	<b>969</b>	<b>476</b>	<b>314</b>	<b>23</b>	<b>15</b>	<b>1,797</b>	
Column%	54%	26%	17%	1%	1%		100%

**TABLE 8. Female community AIDS cases by probable source of infection and race/ethnicity, San Bernardino County, 1983–December 31, 1998**

	Race/Ethnicity					Total	Row%
	Caucasian	African Am	Latina	Asian	Native Am		
Injection drug use	36	35	27	0	0	98	31%
Heterosexual, partner IDU	25	30	19	1	0	75	24%
Heterosexual, partner HIV+	15	16	9	1	0	41	13%
Transfusion	13	2	12	0	0	27	9%
Heterosexual, partner bisex.	14	3	2	0	0	19	6%
Perinat. mother IDU	3	7	1	0	0	11	4%
Heterosexual, partner hemo.	3	2	4	0	0	9	3%
Heterosexual, partner trans.	1	2	1	0	0	4	1%
Perinat. mother sex c IDU	1	0	2	0	0	3	1%
Perinat. mother HIV+	1	1	0	0	0	2	1%
Perinat. mother sex c bisexual	0	0	1	0	0	1	<1%
Perinat. mother sex c HIV+	0	1	0	0	0	1	<1%
Perinat. mother transfused	0	0	1	0	0	1	<1%
Receipt of factor concentrate	1	0	0	0	0	1	<1%
No history obtained/unknown	7	12	1	0	0	20	6%
<b>Total</b>	<b>120</b>	<b>111</b>	<b>80</b>	<b>2</b>	<b>0</b>	<b>313</b>	
Column%	38%	35%	26%	1%	0%		100%

County cases. Forty-seven percent of the local female cases have been attributed to heterosexual contact while the corresponding proportion for the nation is 39%. Fifty-one percent of the county's female cases associated with heterosexual transmission identified at least one sex partner as an IDU in contrast to 42% of the nation's female cases whose infection was attributed to heterosexual contact. The proportion of cases with no identified risk among females is 2.0 times that for males. One possible explanation for this may be that as the number of cases whose probable source of infection is heterosexual contact increases, the likelihood of knowing the risk profile of each partner will decrease. For the purposes of developing prevention education programs and intervention strategies, it is important to recognize that 1,874 (89%) of the 2,110 community cases have been either directly

or indirectly associated with sex between men, injection drug use, or both.

While there have been only 32 cases (2% of all community cases) associated with perinatal transmission, these are important in light of results from the AIDS Clinical Trial Group Protocol 076 (Connor EM, Sperling RS, Gelber R, et al. Reduction of maternal-infant transmission of human immunodeficiency virus type 1 with zidovudine treatment. *N Engl J Med* 1994; 331: 1173-80). This study suggested that zidovudine (ZDV) therapy during the course of pregnancy has the potential to reduce the rate of perinatal transmission by nearly 70%. In response to these findings, the United States Public Health Service (USPHS) issued interim recommendations in February 1994 that HIV-infected women be informed of the potential benefits and unknown long-term risks of ZDV antiretroviral therapy

**TABLE 9. Community AIDS cases by AIDS defining condition, San Bernardino County, 1983-December 31, 1998**

CD4 Lymphocyte count < 200 cells/mm <sup>3</sup>	1,346	33%
Pneumocystis carinii pneumonia	717	18%
Wasting syndrome due to HIV	441	11%
Candidiasis, esophageal	262	6%
Kaposi's sarcoma	214	5%
<i>Mycobacterium avium</i> complex or <i>M. kansasii</i> , disseminated or extrapulmonary	154	4%
HIV encephalopathy (dementia)	152	4%
Cryptococcosis, extrapulmonary	92	2%
Cytomegalovirus retinitis (with loss of vision)	83	2%
Candidiasis, bronchi, trachea, or lungs	82	2%
Herpes simplex: chronic ulcer(s) (>1 month duration)	80	2%
Cytomegalovirus disease (other than in liver, spleen or nodes) onset at >1 month of age	66	2%
Toxoplasmosis of brain, onset at >1 month of age	53	1%
<i>M. tuberculosis</i> , pulmonary	51	1%
Cryptosporidiosis, chronic intestinal	50	1%
Pneumonia, recurrent in a 12 month period	43	1%
Lymphoma, immunoblastic (or equivalent term)	41	1%
<i>M. tuberculosis</i> , disseminated or extrapulmonary	39	1%
<i>Mycobacterium</i> , of other species or unidentified species, disseminated or extrapulmonary	36	1%
Progressive multifocal leukoencephalopathy	16	<1%
Coccidioidomycosis, disseminated or extrapulmonary	14	<1%
Bacterial infections, multiple or recurrent (including <i>Salmonella</i> septicemia)	13	<1%
Lymphoma, primary in brain	13	<1%
Isosporiasis, chronic intestinal (>1 month duration)	12	<1%
Histoplasmosis, disseminated or extrapulmonary	7	<1%
Lymphoma, Burkitt's (or equivalent term)	7	<1%
Carcinoma, invasive cervical	6	<1%
Lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia	5	<1%
<b>Total Reports of Disease</b>	<b>4,095</b>	<b>100%</b>
Total Cases	2,110	

during pregnancy and the perinatal period (Centers for Disease Control and Prevention. Recommendations of the U.S. Public Health Service task force on the use of zidovudine to reduce perinatal transmission of human immunodeficiency virus. MMWR 1994; 43 [RR-11]: 1-20). The recommendations were specific with regard to CD4 cell count, weeks of gestation, and history of antiretroviral therapy. Since then, the introduction of combination therapy has resulted in changes in the standard treatment of HIV. Although pregnancy may influence decisions as to the timing and type of therapy, the USPHS has indicated that, "pregnancy is not an adequate reason to defer standard therapy. There are unique considerations regarding use of antiretroviral drugs during pregnancy, including the potential need to alter dosing due to physiologic changes associated with pregnancy, the potential for adverse short or long-term effects on the fetus and newborn, and effectiveness for reducing the risk of perinatal transmission." All health care providers are encouraged to offer culturally, linguistically, and educationally appropriate information and counseling such that infected women can take action to interrupt vertical transmission of HIV.

Providers who serve HIV-infected pregnant women are encouraged to contact the San Bernardino County Department of Public Health, Loma Linda University Children's Hospital and Medical Center or Arrowhead Regional Medical Center for assistance/consultation.

The annual number of reported AIDS cases associated with perinatal transmission has declined since 1995 (n=9). In 1998, one case attributed to perinatal transmission was reported.

Table 9 was developed to provide local physicians, pharmacists and health planners with some indication of the conditions which accompany the immune deficiency associated with advanced HIV disease. It is not surprising that there are more AIDS defining events than there are cases, as AIDS patients experience multiple diseases which would individually support a diagnosis of AIDS. In fact, this list underrepresents the number of AIDS defining conditions because once a case has been reported, physicians are under no obligation to report additional AIDS defining conditions that develop subsequent to the initial diagnosis other than those made reportable in Section 2500, *California Code of Regulations* (coccidioidomycosis, cryptococcosis, cryptosporidiosis, *Salmonella* septicemia, toxoplasmosis, and tuberculosis).



**TABLE 10. Community AIDS cases by health planning region, San Bernardino County, 1983-December 31, 1998**

Region	Reported Cases	% Cases	1990 Population	% Population
East Valley	1,011	48%	553,299	39%
West Valley	722	34%	554,304	39%
Desert	374	18%	310,777	22%
Homeless	3	<1%	Unknown	Unknown
<b>Total</b>	<b>2,110</b>	<b>100%</b>	<b>1,418,380</b>	<b>100%</b>

**TABLE 11. Community AIDS cases and cumulative incidence rates for cities/communities reporting 10 or more cases, San Bernardino County, 1983-December 31, 1998**

Reported Cases		Cumulative Incidence Rate/100,000	
San Bernardino	497	Joshua Tree	410
Ontario	203	San Bernardino	303
Fontana	160	Big Bear City	224
Rialto	118	Big Bear Lake	224
Rancho Cucamonga	106	Crestline	221
Redlands	104	Yucca Valley	219
Upland	88	Bloomington	205
Chino	78	Adelanto	200
Victorville	77	Barstow	191
Colton	64	Victorville	189
Hesperia	64	Lake Arrowhead	184
Highland	58	Fontana	183
Apple Valley	57	Montclair	176
Montclair	50	Redlands	172
Barstow	41	Highland	168
Bloomington	31	Rialto	163
Chino Hills	30	Colton	159
Yucca Valley	30	Ontario	152
Yucaipa	25	Upland	139
Twetynine Palms	21	Chino	131
Crestline	19	Hesperia	127
Adelanto	17	Apple Valley	124
Joshua Tree	16	Chino Hills	109
Big Bear Lake	12	Rancho Cucamonga	105
Lake Arrowhead	12	Twentynine Palms	94
Big Bear City	11	Yucaipa	76
Loma Linda	11	Loma Linda	63
Phelan	11	Phelan	NA

The AIDS case surveillance definition was changed by the CDC in 1985, 1987, 1988 (residency status only) and 1993. The most recent change included CD4 lymphocyte counts <200 cells/mm<sup>3</sup>. It is interesting to note that this AIDS defining condition became the most frequently reported within 15 months of its implementation.

Table 10 shows the distribution of community AIDS cases by health planning region. The population and case distributions differ in that 48% percent of the community AIDS cases have been reported from the east valley while only 39% of the population resides in that region. Thirty-four percent of the cases have been reported from the west valley health planning region where 39% of the population lives. Eighteen percent of the cases have been reported from desert cities/communities while 22% of the total population lives in that health planning region.

Table 11 shows that there are 28 cities/communities within San Bernardino County with ten or more reported cases of AIDS. It is somewhat surprising that Joshua Tree, Big Bear

City, Big Bear Lake, Crestline and Yucca Valley have high cumulative incidence rates. However, these findings are based on small numbers of cases and the relatively small populations of these communities. While reports of AIDS have been widely distributed throughout the county, it has been decided not to publish the number of cases for cities/communities with fewer than ten cases as this might compromise an individual's right to confidentiality. It is not, however, believed that confidentiality is compromised by listing said cities. Therefore, those cities/communities from which at least one, but fewer than ten resident cases have been reported include Alta Loma, Baker, Blue Jay, Cedar Glen, Crestpark, Devore, Earp, Erwin Lake, Etiwanda, Fawnskin, Forest Falls, Fort Irwin, Grand Terrace, Helendale, Landers, Lucerne Valley, Lytle Creek, Mentone, Morongo Valley, Muscoy, Needles, Newberry Springs, Norton Air Force Base, Pinon Hills, Rimforest, Running Springs, Skyforest, Sugarloaf, Trona, Twin Peaks, Wonder Valley, Wrightwood and Yermo.

**TABLE 12. Community AIDS case annual and cumulative mortality rates by year of report, San Bernardino County, 1983-December 31, 1998**

Year	Reported	Deaths	Fatality	Cumulative
1983	1	1	100%	100%
1984	6	6	100%	100%
1985	6	6	100%	100%
1986	23	23	100%	100%
1987	79	77	97%	98%
1988	79	72	91%	95%
1989	118	112	95%	95%
1990	114	108	95%	95%
1991	143	131	92%	94%
1992	238	182	76%	89%
1993	344	212	62%	81%
1994	249	118	47%	75%
1995	203	76	37%	70%
1996	182	53	29%	66%
1997	166	37	22%	62%
1998	159	21	13%	59%
<b>Total</b>	<b>2,110</b>	<b>1,235</b>		

The local annual case fatality rates (see table 12) are consistently higher than those for the United States through 1996. There is no reason to believe that HIV is more virulent within San Bernardino County or that the medical care provided within the county is inferior to that of the nation. The observed differences are most likely due to more aggressive longitudinal surveillance of AIDS cases in San Bernardino County, thereby reducing the number lost to follow-up. Highly active anti-retroviral therapy (HAART) was introduced in late 1996. This would explain, in part, the observed decline in the annual and cumulative case fatality rates in 1997 and 1998. The 1998 cumulative death rates for San Bernardino County and the nation are comparable.

The data presented in table 13 indicate that there are no proportional differences in the regional

distribution of community AIDS cases by gender. This suggests that there should be no difference in the need for gender specific care or support services by health planning region.

The proportion of African Americans with AIDS exceeds the corresponding proportion of the general population in each of the health planning regions. This finding would indicate that HIV/AIDS health and support service providers can reasonably expect to provide proportionately more service to those of African descent than to Caucasians, Latinos, Asian Pacific Islanders and Native Americans.

Caucasians constitute 47% of the AIDS cases who resided in the east valley at the time of initial diagnosis, 49% in the west valley, 70% in the desert and 58%, 56% and 74% of the general population, respectively.

The proportions of Latinos with AIDS are comparable to the proportions of Latinos in the general population in each of the three health planning regions.

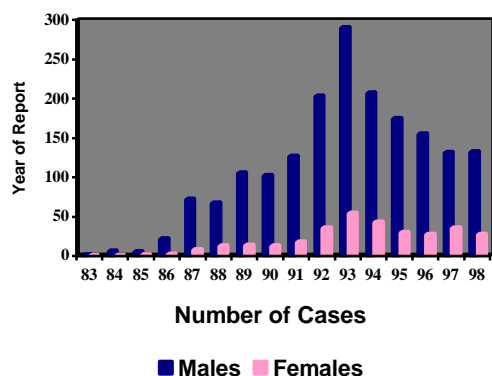
There is a difference in the proportions of men who have sex with men and IDUs with AIDS between the east valley and the west valley. A larger proportion (18%) of east valley cases are associated with IDU when compared with the west valley (13%). At the same time, the proportion of west valley cases attributed to sex between men (61%) is greater than that for the east valley (53%). The distribution of AIDS cases

**TABLE 13. Community AIDS cases by health planning region, gender, race/ethnicity and risk profile, San Bernardino County, 1983-December 31, 1998\***

	East Valley		West Valley		Desert		Total	
Male	841	83%	630	87%	324	87%	1,795	85%
Female	170	17%	92	13%	50	13%	312	15%
<b>Total</b>	<b>1,011</b>		<b>722</b>		<b>374</b>		<b>2,107</b>	100%
Caucasian	472	47%	355	49%	260	70%	1,087	52%
Latino	274	27%	233	32%	49	13%	556	26%
African American	249	25%	120	17%	55	15%	424	20%
Asian/Pacific Islander	10	1%	12	2%	3	1%	25	1%
Native American	6	1%	2	<1%	7	2%	15	1%
Sex between men	533	53%	439	61%	204	55%	1,176	56%
Injection Drug Use	187	18%	95	13%	55	15%	337	16%
Heterosexual contact	117	12%	65	9%	32	9%	214	10%
Sex between men/IDU	90	9%	62	9%	43	11%	195	9%
Transfusion	20	2%	21	3%	11	3%	52	2%
Receipt of factor concentrate	24	2%	6	1%	6	2%	36	2%
Perinatal transmission	10	1%	11	2%	11	3%	32	2%
Unknown	30	3%	23	3%	12	3%	65	3%
Column %		48%		34%		18%		

\*Three homeless community cases are not included in this table

associated with these two risk factors in the desert health planning region is comparable to that of the east valley. There are no meaningful differences in the regional distribution of community AIDS cases associated with sex between men in addition to IDU, receipt of factor concentrate, transfusion, perinatal transmission or heterosexual contact.

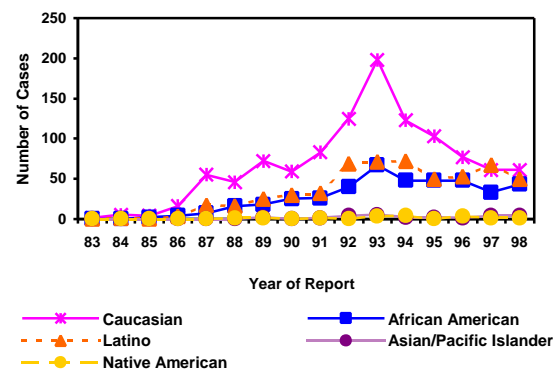


**FIGURE 2. Community AIDS cases by gender, San Bernardino County, 1983–December 31, 1998**

Figure 2 shows that the number of AIDS diagnoses among males increased most dramatically between 1985 (n=5) and 1987 (n=72). Between 1988 and 1992, inclusive, the annual number of cases increased from 67 to 203. In 1993, 290 cases were reported. A substantial number of the 1993 cases were reported as the result of changes in the surveillance case definition. The actual impact of the change will be described later in this report. The annual number of male cases declined to 207 in 1994, 174 in 1995, 155 in 1996, 131 in 1997 and increased to 132 in 1998. The latter represents a 1% increase over the prior year and 54% fewer cases than were reported in 1993.

A dramatic increase in the number of cases among women occurred between 1986 (n=2) and 1989 (n=13). Between 1990 and 1992, inclusive, the annual number of cases increased from 12 to 35. In 1993, 54 cases were reported. While the proportionate increase in 1993 was greater for females (54%) when compared with males (43%), it is important to recognize that the ratio of male to female cases was 5.4:1. The annual number of female cases was 42 in 1994, 29 in 1995, 27 in 1996, 35 in 1997 and 27 in 1998. This represents a 23% reduction from the number reported in 1997 and 50% fewer cases than were reported in 1993.

Figure 3 indicates that the number of AIDS diagnoses among Caucasians increased most dramatically between 1985 (n=4) and 1987 (n=55). Between 1988 and 1992, inclusive, the annual number of cases ranged from 46 to 125. In 1993, 198 cases were reported. The annual number of Caucasian cases was 123 in 1994, 103 in 1995, 77 in 1996, 61 in 1997 and 61 in 1998. This represents 69% fewer cases than were reported in 1993.



**FIGURE 3. Community AIDS cases by racial/ethnic group, San Bernardino County, 1983–December 31, 1998**

The first case among Latinos was reported in 1984. The annual number of cases among this racial/ethnic group showed the greatest increase between 1986 (n=3) and 1991 (n=32). Sixty-nine cases were reported in 1992. In 1993, 71 cases were reported. The annual number of Latino cases was 72 in 1994, 50 in 1995, 53 in 1996, 68 in 1997 and 50 in 1998. The last observation represents a 26% reduction from the previous year.

The first two African American cases were reported in 1985. The annual number of cases among this racial group increased most dramatically between 1986 (n=4) and 1990 (n=25). Twenty-six cases were reported in 1991 and 40 were reported in 1992. In 1993, 67 cases were reported. The annual number of African American cases was 48 in 1994, 48 in 1995, 48 in 1996, 33 in 1997 and 43 in 1998. The latter represents an increase of 30% over the prior year.

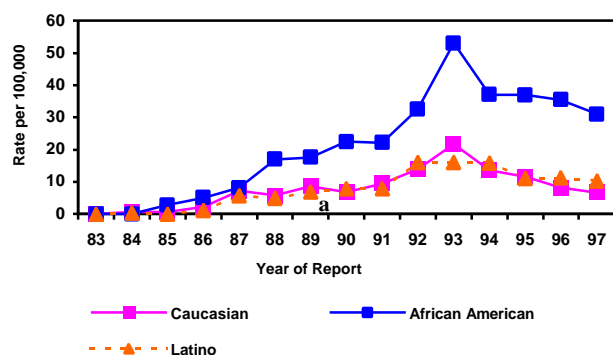
The first two cases among Asian/Pacific Islanders were reported in 1989. Between 1990 and 1992, inclusive, the annual number of cases ranged from 0 to 4. In 1993, 5 cases were reported. The annual number of Asian/Pacific Islander cases was

2 in 1994, 2 in 1995, 1 in 1996, 4 in 1997 and 4 in 1998.

The first Native American case was reported in 1988. Between 1989 and 1992, inclusive, the annual number of cases ranged from 0 to 1. In 1993, 3 cases were reported. The annual number of Native American cases was 4 in 1994, 0 in 1995, 3 in 1996, 1 in 1997 and 1 in 1998.

When evaluating these data, it is important to recognize that the numbers are relatively small, and therefore, variable. Epidemiologically, it is of greater utility to study rates of disease. Rates are determined by dividing the number of cases in a selected group by the total population for that selected group. Rates provide an estimate of risk within a given community.

Figure 4 indicates that the incidence rate (IR) of AIDS among Caucasians increased dramatically between 1985 (IR=0.6/100,000) and 1987 (IR=7.3/100,000). Between 1988 and 1992, inclusive, the incidence rate ranged from 5.8/100,000 to 13.9/100,000. In 1993, the incidence rate was 21.8/100,000 based on 198 cases. The rate decreased to 13.6/100,000 (n=123) in 1994, 11.4/100,000 (n=103) in 1995, 8.5/100,000 (n=77) in 1996 and 6.7/100,000 (n=61) in 1997. Population estimates by race/ethnicity for 1998 are not currently available.



**FIGURE 4. Community AIDS case rates/100,000\* for selected racial/ethnic groups, San Bernardino County, 1983-December 31, 1997**

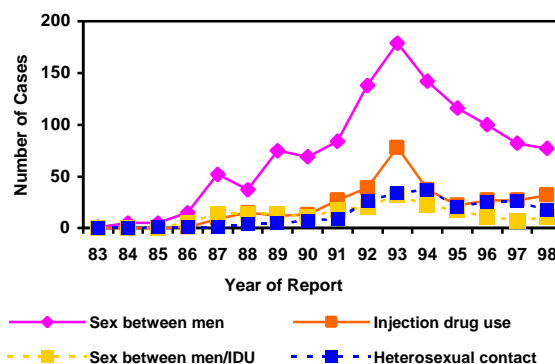
\*Mid-year population estimates for each racial/ethnic group were used to calculate incidence rates

The incidence rate among Latinos increased significantly between 1986 (IR=1.1/100,000) and 1991 (IR=7.1/100,000). Between 1992 and 1994, inclusive, the rate remained essentially the same (.16/100,000). In 1995, the incidence among

Latinos was 10.8/100,000 based on 50 cases and was comparable in 1996 (11.2/100,000 based on 53 cases). In 1997, the incidence rate for Latinos was 13.7/100,000 (n=67).

The rate among African Americans has increased dramatically since the first cases from this racial/ethnic group were reported in 1985. The rate increased from 2.8/100,000 in 1985 to 32.6/100,000 in 1992. In 1993, the incidence rate was 53.0/100,000 based on 67 cases and clearly represents the highest rate of disease for any racial/ethnic group in San Bernardino County. The rate among African Americans declined to 37.1/100,000 (n=48) in 1994, and remained stable in 1995 (IR=36.3/100,000, n=48) and 1996 (35.6/100,000, n=48). In 1997, the incidence rate for African Americans was 23.8/100,000 (n=33).

In 1997, the rate among African Americans was 3.5 times that for Caucasians and 1.7 times the rate for Latinos. It must be understood that one's racial/ethnic group alone does not place one at increased risk for AIDS or HIV infection. This disease is associated with well recognized risk behaviors. Since the overwhelming majority of San Bernardino County community cases have been associated with sex between men and IDU (see tables 7 and 8), prevention education activities have been targeted toward those who engage in same. These data do, however, support the need to place special emphasis on African Americans who engage in behaviors that place them at increased risk for HIV infection.



**FIGURE 5. Community AIDS cases by probable source of infection, San Bernardino County, 1983-December 31, 1998**

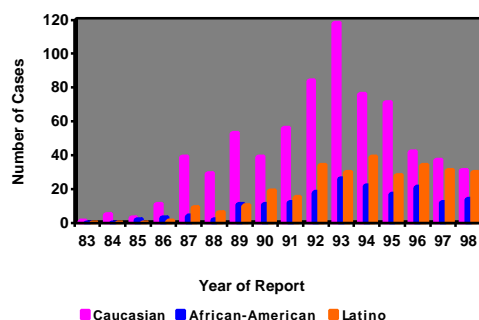
Figure 5 indicates that the first San Bernardino County case associated with sex between men was reported in 1983. It is clear that the number of

cases attributable to this behavior increased most dramatically between 1984 ( $n=5$ ) and 1987 ( $n=52$ ). Between 1988 and 1992, inclusive, the number of cases ranged from 37 to 138. In 1993, 179 cases were reported. The annual number of cases associated with men who have sex with men was 142 in 1994, 116 in 1995, 100 in 1996, 82 in 1997 and 77 in 1998. The latter represents a 6% reduction from the previous year and one of 57% from 1993.

The first five cases associated with sex between men in addition to IDU were reported in 1986. Between 1987 and 1992, inclusive, the number of cases remained fairly stable. In 1993, 32 cases were reported. The annual number of cases associated with men who have sex with men in addition to IDU was 22 in 1994, 17 in 1995, 11 in 1996, 7 in 1997 and 11 in 1998.

The first case associated with heterosexual contact was reported in 1985. Between 1986 and 1991, inclusive, the annual number of cases attributable to heterosexual contact was less than 10. Twenty-six cases were reported in 1992. In 1993, 34 cases were reported. The annual number of cases associated with heterosexual contact was 37 in 1994, 21 in 1995, 25 in 1996, 26 in 1997 and 17 in 1998.

The first case associated with IDU alone was reported in 1986. This was followed by substantial annual increases in 1987 ( $n=9$ ) and 1988 ( $n=15$ ). Between 1989 and 1992, inclusive, the annual number of cases varied from 12 to 39. In 1993, 78 cases were reported. The annual number of cases associated with IDU alone was 37 in 1994, 22 in 1995, 27 in 1996, 27 in 1997 and 32 in 1998. The relative stability in the annual number of cases associated with IDU between

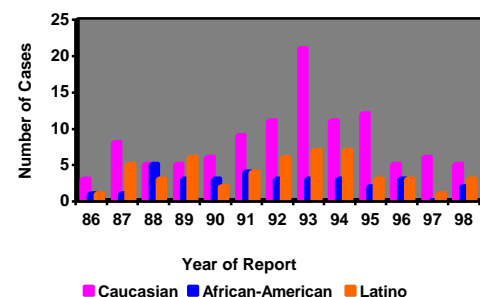


**FIGURE 6. Community AIDS cases associated with sex between men by selected racial/ethnic groups, San Bernardino County, 1983-December 31, 1998**

1996 and 1998, inclusive, is of considerable concern to the Department of Public Health because it is not declining.

It is clear from these data that sex between men remains the most frequently reported risk factor for those diagnosed with an AIDS defining condition in San Bernardino County. These data also suggest that in terms of reported cases associated with these risk factors, the epidemic peaked in 1993.

Figure 6 shows that the majority of cases associated with sex between men have occurred among Caucasians. The annual number of cases associated with men who have sex with men increased through 1993. In 1994, the number of cases declined by 36% among Caucasians, 15% among African Americans, and increased by 30% among Latinos. In 1995, the number of cases decreased by 7% among Caucasians, 23% among African Americans, and 28% among Latinos. In 1996, the number of cases declined by 41% among Caucasians, remained stable among African Americans, and increased by 21% among Latinos. The number of AIDS cases associated with sex between men declined again for these three racial/ethnic groups in 1997. The decreases were 12% among Caucasians, 43% for African Americans and 9% among Latinos. In 1998, the number of reported cases decreased by 16% among Caucasians but remained stable for African American and Latino men who have sex with men.

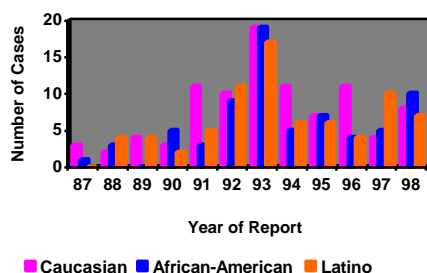


**FIGURE 7. Community AIDS cases associated with sex between men and injection drug use by selected racial/ethnic groups, San Bernardino County, 1986-December 31, 1998**

Figure 7 indicates that the largest proportion of cases associated with sex between men in addition to IDU has occurred among Caucasians. In 1994, the number of cases associated with sex between

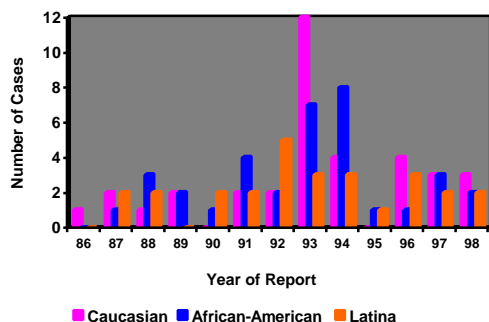
men in addition to IDU declined by 48% among Caucasians but remained stable among African Americans and Latinos. By 1998, only ten cases associated with sex between men in addition to IDU were reported among these selected racial/ethnic groups.

Figure 8 shows that the largest proportion of cases among injection drug using males has occurred among Caucasians. The number of cases peaked for these three racial/ethnic groups in 1993. The average annual number of cases (0=21.0) for the three racial/ethnic groups under study has remained remarkably stable between 1994 and 1998, inclusive.



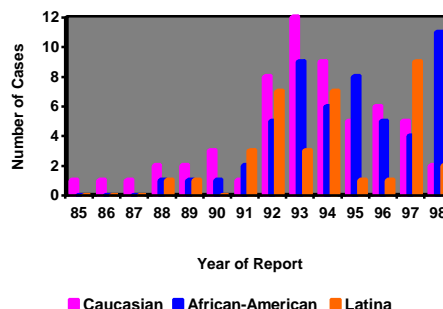
**FIGURE 8. Male community AIDS cases associated with injection drug use by selected racial/ethnic groups, San Bernardino County, 1987-December 31, 1998**

Figure 9 shows that the number of reported cases peaked for Latina IDUs in 1992, for Caucasian female IDUs in 1993 and for African American injection drug using women in 1994. In 1998, seven cases of AIDS among women were attributed to IDU.



**FIGURE 9. Female community AIDS cases associated with injection drug use by selected racial/ethnic groups, San Bernardino County, 1985-December 31, 1998**

Figure 10 shows that the largest proportion of female cases associated with heterosexual contact has been among Caucasians. The annual number of cases among heterosexual Latinas and African American women were comparable until 1993. Since then, the total number of cases among Caucasians and African Americans has been comparable with fewer cases being reported among Latinas. In 1998, 15 cases of AIDS among women were associated with heterosexual contact.



**FIGURE 10. Female community AIDS cases associated with heterosexual contact by selected racial/ethnic groups, San Bernardino County, 1985-December 31, 1998**

## AIDS Cases by Survival Status

Table 14 provides insight into the future health and support service needs of persons living with AIDS in San Bernardino County. Changes in the demography of the epidemic can be detected by comparing relative proportions of the living and the dead. For example, the percentage of those living with AIDS who are female is greater than the proportion of females among those who have died. This presumably reflects increases in heterosexual transmission and injection drug use among women as has been reported elsewhere in the United States. The implication of these data is that HIV-related health and support services must be increasingly sensitive to the unique needs of women living with HIV/AIDS.

The increasing proportion of people of color living with AIDS over time reflects the "changing face" of the epidemic described throughout the nation. The implication for health planners is the increasing need to provide health and support services which are culturally competent and linguistically appropriate.



**TABLE 14. Community AIDS cases by survival status, gender, race/ethnicity, age, and risk profile, San Bernardino County, 1983-December 31, 1998**

	Living		Dead	
Male	723	83%	1,074	87%
Female	152	17%	161	13%
<b>Total</b>	<b>875</b>		<b>1,235</b>	<b>100%</b>
Caucasian	403	46%	686	56%
Latino	254	29%	302	24%
African American	195	22%	230	19%
Asian/Pacific Islander	13	1%	12	1%
Native American	10	1%	5	<1%
<5	12	1%	15	1%
5-12	6	1%	4	<1%
13-19	5	1%	8	1%
20-29	178	20%	243	20%
30-39	403	46%	517	42%
40-49	202	23%	291	24%
50+	69	8%	157	13%
Sex between men	467	53%	710	57%
Injection drug use	132	15%	207	17%
Sex between men/IDU	78	9%	117	9%
Heterosexual contact	111	13%	103	8%
Transfusion	20	2%	32	3%
Receipt of factor conc.	10	1%	26	2%
Perinatal transmission	16	2%	16	1%
Unknown	41	5%	24	2%

The declining proportion of older persons living with AIDS may be explained by the reduction in the annual number of cases associated with transfusion. Forty-eight (98%) of the 49 transfusion associated cases in San Bernardino County have occurred among adults. Twenty-one (43%) of those were people 50 years of age or older whose risk was receipt of a transfusion.

The apparent change in the risk profile of persons living with AIDS is also worthy of discussion. It is not surprising that the number of factor concentrate and transfusion recipients living with AIDS has declined. Routine screening of the blood supply was instituted in the spring of 1985. This significantly reduced the likelihood of infections associated with the blood supply. The decline in the number of gay and bisexual men living with AIDS probably reflects behavior change that was initiated within the gay community as early as 1983. The increase in the proportion of heterosexuals living with AIDS also speaks to the changing epidemiology of the disease. It is believed that health planners and providers must use data such as these to better plan to meet the health and support service needs of persons living with HIV/AIDS.

### **Mortality Analysis: Duration of Illness After Diagnosis**

Table 15 shows the mean and median survival in months by selected intervals of diagnosis, gender, race/ethnicity, age group at diagnosis and probable source of infection for those who have died.

**TABLE 15. Survival time in months for community AIDS cases who have died by year of diagnosis, gender, race/ethnicity, age at diagnosis and risk profile, San Bernardino County, 1983-December 31, 1998**

	N	Mean Survival	Standard Error	Median Survival
1985 or before	23	14	4.1	11
1986-1988	225	22	1.8	13
1989-1991	426	19	0.9	14
1992-1994	413	23	0.9	19
1995 or after	147	12	1.0	6
<b>Total</b>	<b>1,234</b>			
Male	1,071	20	0.6	14
Female	163	20	1.7	14
Caucasian	683	21	0.8	16
Latino	300	19	1.0	15
African American	232	17	1.3	11
Asian/Pacific Islander	12	19	5.8	12
Native American	7	24	5.3	26
<5	16	14	5.6	2
5-12	5	41	11.5	42
13-19	8	19	6.5	14
20-29	243	20	1.2	18
30-39	513	18	0.8	14
40-49	291	16	1.0	11
50+	158	13	1.3	6
Sex between men	710	20	0.7	16
Injection drug use	204	19	1.4	14
Sex between men/IDU	117	20	2.1	12
Heterosexual contact	104	21	2.0	15
Receipt of factor concentrate	26	27	5.3	20
Transfusion	32	16	2.4	15
Perinatal transmission	18	19	5.7	9
No identified risk/Unknown	23	8	3.7	1

Among those who have died, differences in average survival exist according to the interval of diagnosis. People who were diagnosed with AIDS prior to 1986 or after 1994 and who have died, lived shorter on average than those diagnosed between 1986 and 1994, inclusive. Those diagnosed prior to 1986, in all likelihood, never had access to highly active antiretroviral therapy (HAART). Those diagnosed after 1995 and who have died probably represent persons with barriers to care; treatment failures; or persons who could not tolerate or adhere to HAART.

For those who have died, there was no difference in average survival by gender.

Caucasians diagnosed with AIDS who have died lived longer on average than Latinos and African Americans who have died. This might be explained by barriers to care among people of color or by delays in seeking care. There have been a number of anecdotal reports from the community that African American males do not routinely seek medical care until it is absolutely necessary. Differences in survival observed among Asian/Pacific Islanders and Native Americans who have died must be interpreted with caution due to the large standard error.

For those who have died, there were differences in survivorship among the age groups under study. The decreased survival among the very young is probably due to the fact that most of these infections were acquired perinatally and neonates do not have fully competent immune systems. There was a great deal of variability due to small sample sizes among those aged 5-19 years who have died. Persons aged 20-39 years at diagnosis of AIDS and who have died lived longer on average than those diagnosed at 40 years of age or older who have died. The tendency for decreased survival among those aged 40 and older has been reported elsewhere in the United States.

There were no differences in average survival among those who have died according to probable source of infection for recipients of factor concentrate, men who have sex with men, IDUs, men who have sex with men in addition to IDU, those whose infection was attributed to heterosexual contact, and those associated with perinatal transmission. The decreased survival among transfusion recipients may be due to age, year of infection or lack of access to HAART.

## Impact of 1993 Revision of AIDS Surveillance Case Definition

In 1993, the CDC expanded its AIDS surveillance case definition to include pulmonary tuberculosis, invasive cervical carcinoma, recurrent bacterial pneumonia and CD4 lymphocyte counts of less than 200 cells/mm<sup>3</sup>. These AIDS defining conditions must be accompanied by evidence of HIV infection. One hundred eighty-two (53%) of the 344 community cases reported in San Bernardino County in 1993 would not have been reported were it not for the expansion of the surveillance definition. It is somewhat surprising that the demography and risk profile of the 182 cases meeting only the 1993 changes in the surveillance definition were very similar to those cases that met the 1987 surveillance criteria.

It is believed that 1993 marked the peak for reports of AIDS cases within San Bernardino County. This belief is supported by the apparent completeness of reporting, by the fact that seroprevalence is declining or is at very low levels across all testing programs and that one of the recent changes in the CDC surveillance criteria (CD4 count <200 cells/mm<sup>3</sup>) became the most frequently reported AIDS defining condition within less than fifteen months. Based on existing data and our understanding of the natural history of the disease, the only condition that might have a comparable effect on case reporting would be to require reporting of HIV seropositivity.

## Estimate of Persons Living with HIV

During the early 1990s, the CDC developed a mathematical model to predict the number of persons living with HIV in a given jurisdiction. The model was based on the number of persons known to be living with AIDS; an estimate of the number of persons infected with HIV but not diagnosed with an AIDS defining illness; and an estimate of the number of people with  $\geq 200$  CD4 cells/mm<sup>3</sup>. The AIDS Program's AIDS case registry indicated that there were 875 people living with AIDS in San Bernardino County as of December 31, 1998. After applying the CDC model, it was determined that there are approximately 3,066 persons living with HIV in San Bernardino County (note: only community cases were used in these calculations).



This model has since fallen into disfavor among some epidemiologists. In response, the CDC has suggested that the best estimates for persons living with HIV were those developed in 1995. This suggestion is predicated on the facts that the annual rate of new infections has remained stable and HAART has dramatically reduced the mortality rate. According to the April 1996 issue of the *San Bernardino County AIDS Program Report* (Vol XII, No. 2, p13) there were 3,800 persons living with HIV in San Bernardino County in 1995.

These estimates, irrespective of the time period under study, must be interpreted with caution due to the fact that they are based on reported AIDS cases. Not all AIDS cases are reported and the new treatment regimens have slowed the progression from HIV infection to the development of an AIDS defining condition. These developments, coupled with the fact that HIV is not reportable in California, make the generation of accurate estimates challenging.

### Years of Potential Life Lost

Table 16 indicates that as of December 31, 1998, the HIV epidemic has resulted in 1,235 deaths and 33,648 years of potential life lost for San Bernardino County residents.

**TABLE 16. Years of potential life lost (YPLL) to age 65 among community AIDS cases by age group, San Bernardino County, 1983-December 31, 1998**

Age group	AIDS deaths	1990 Pop.	Avg years to 65	YPLL
<5	15	138,342	62.5	938
5-14	5	240,987	55	275
15-24	58	214,310	45	2,610
25-34	451	271,965	35	15,785
35-44	448	213,007	25	11,200
45-54	167	122,370	15	2,505
55-64	67	92,499	5	335
65-74	20	75,716		
75-84	4	38,407		
85+	0	10,777		
<b>Total</b>	<b>1,235</b>	<b>1,418,380</b>		<b>33,648</b>

### Economic Impact

There are a number of methods by which to estimate the economic impact of the HIV epidemic. Fred Hellinger, PhD of the Division of Cost and Financing, United States Public Health Service estimated that the lifetime cost for providing medical care to one person with HIV was \$119,000. If the assumptions upon which his estimate is based are correct, the epidemic will cost the health care system at least \$251,090,000

based on the 2,110 community AIDS cases reported within San Bernardino County as of December 31, 1998. If one were to consider the potential cost based on the estimates of 3,066 and 3,800 persons living with HIV, then an additional \$364,854,000 to \$452,200,000 would be required to provide medical care. It is important to recognize that these costs are for medical care only and do not represent the costs for support services such as case management, mental health counseling, dental care, housing, substance abuse counseling and treatment, home health care, transportation, food services and legal assistance.

**TABLE 17. Loss of earning power among community AIDS cases by age group, San Bernardino County, 1983-December 31, 1998**

		Avg Years to 65	YPLL	Economic Loss
25-34	451	35	15,785	\$583,681,945
35-44	448	25	11,200	414,142,400
45-54	167	15	2,505	92,627,385
55-64	67	5	335	12,387,295
<b>Total</b>	<b>1,133</b>		<b>29,825</b>	<b>\$1,102,839,025</b>

A supplemental approach would be to calculate the loss of earning power within the county. It is recognized that all of those with AIDS do not contribute equally to the economic base. However, if one were to assume that the average person with AIDS would have worked from the age of 25 until 65 at the median annual income, then the economic loss to San Bernardino County based on 1,133 deaths and 29,825 years of potential life lost would be \$1,102,839,025. Regardless of how one estimates the impact of the HIV epidemic (years of potential life lost, cost for medical care, or loss of earning power for the community), it must minimally be described as catastrophic. It is incumbent upon all citizens to support primary and secondary prevention education efforts so as to reduce the social and economic cost of this epidemic.

Figures 11 through 13, inclusive, show reported community AIDS cases during the first six years, first 11 years and first 16 years of the epidemic in San Bernardino County. Figure 14 shows persons living with AIDS in San Bernardino County by zip code as of December 31, 1998. The map is interesting in that some zip codes in the desert region no longer have resident cases. Regardless, maps such as these are extremely useful to provide visual evidence of the geographic distribution and concentration of reported AIDS cases within San Bernardino County.

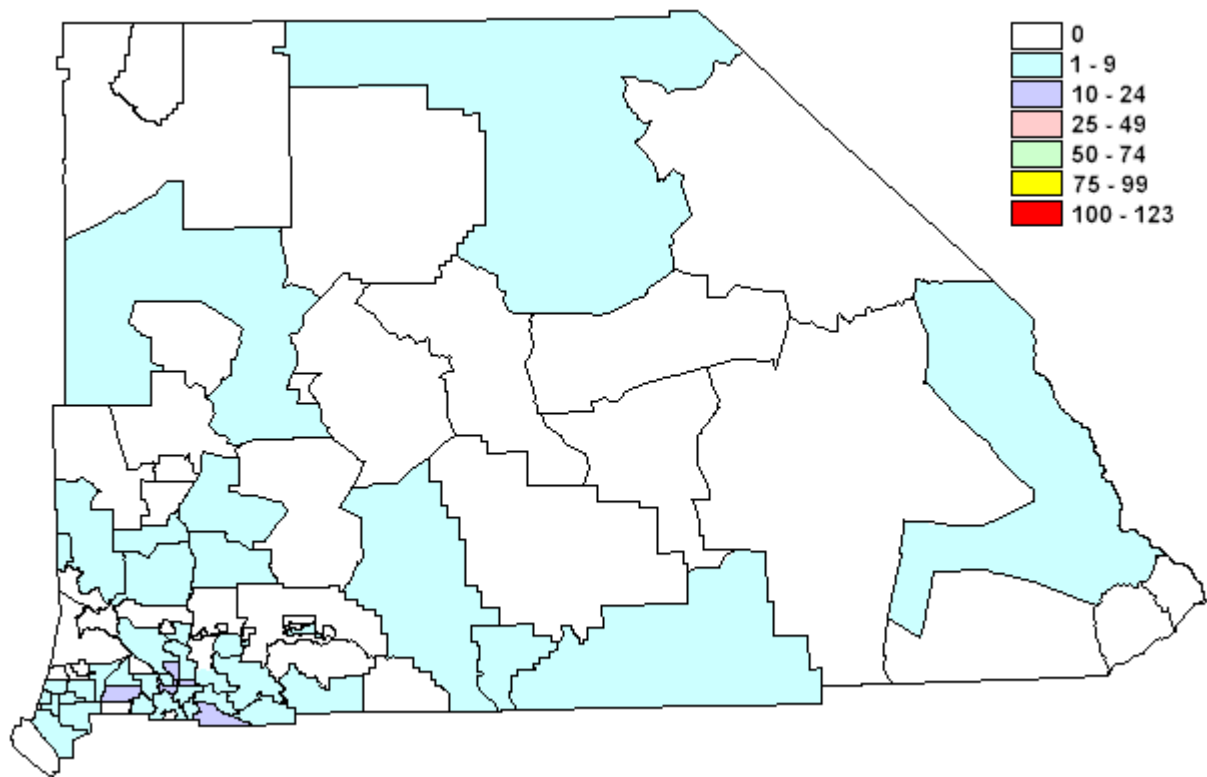


FIGURE 11. AIDS cases by zip code, San Bernardino County, 1983-1988

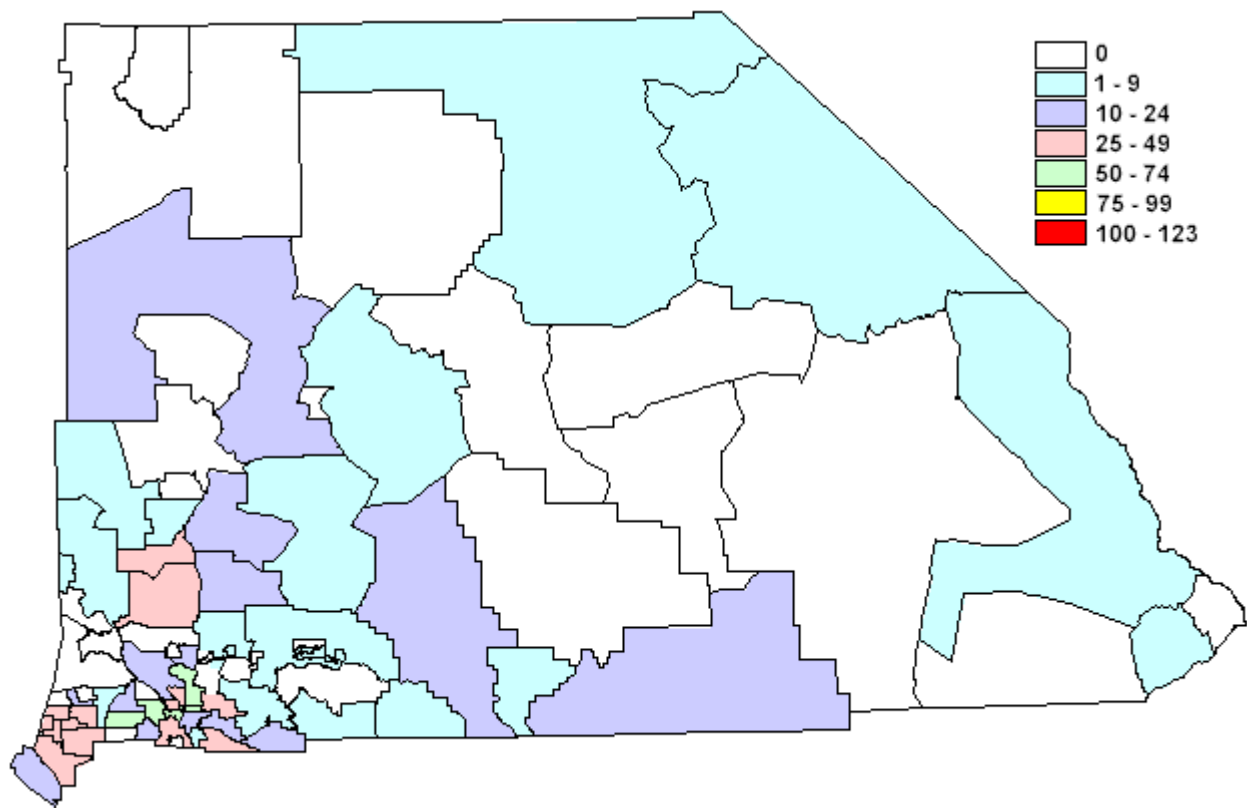
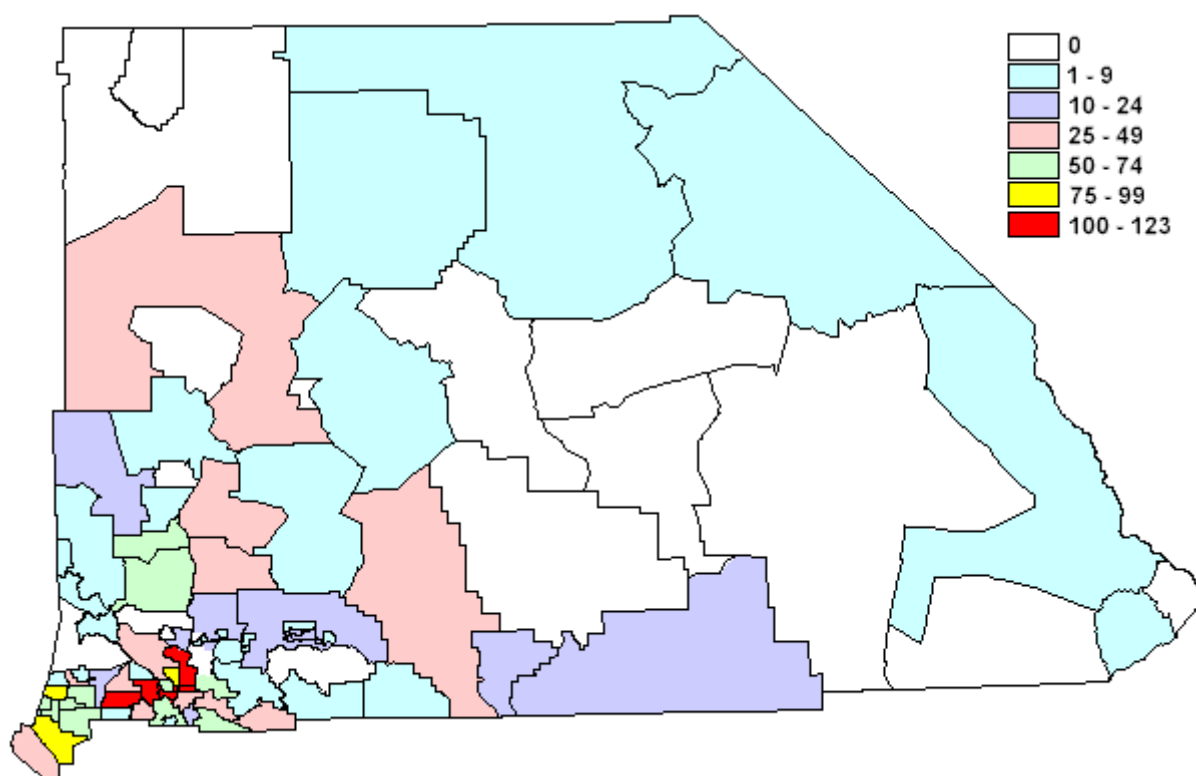
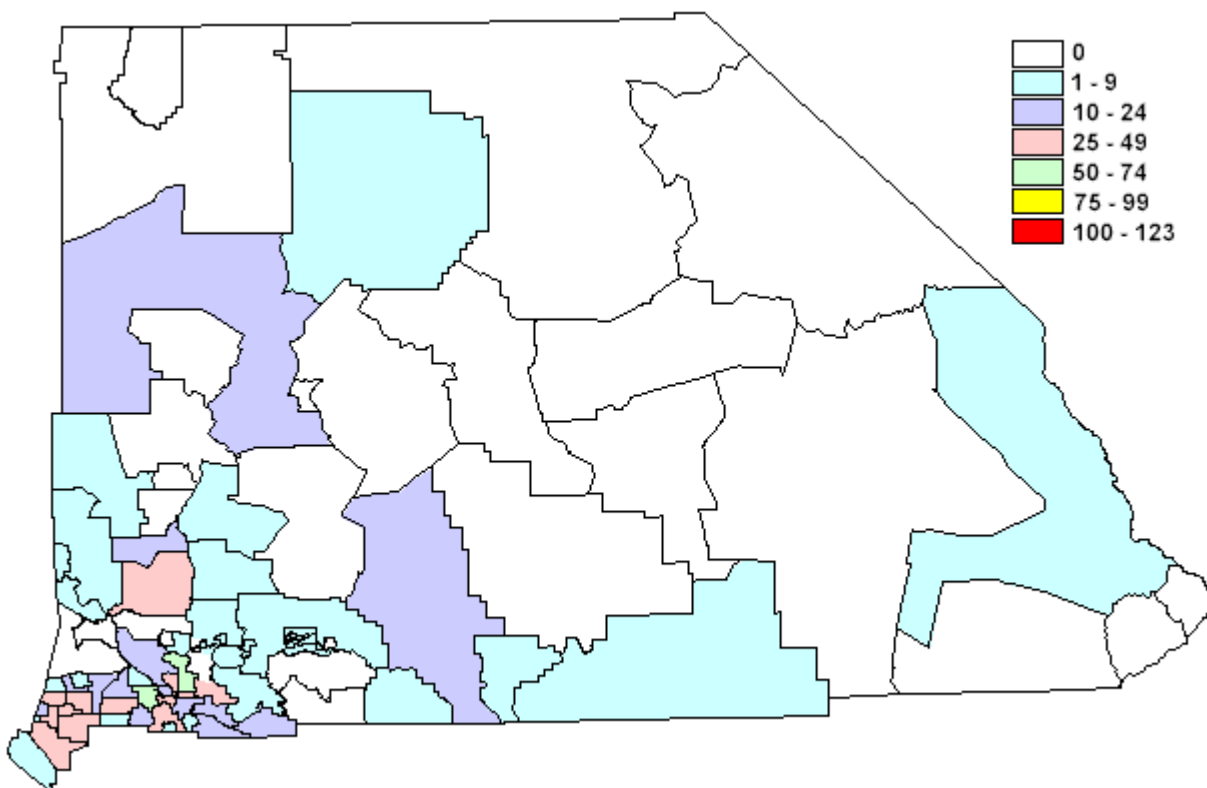


FIGURE 12. AIDS cases by zip code, San Bernardino County, 1983-1993



**FIGURE 13. Aids cases by zip code, San Bernardino County, 1983-1998**



**FIGURE 14. Persons living with AIDS by zip code, San Bernardino County, 1998**

## Institutional Cases

Institutional cases are defined as persons with one or more AIDS defining conditions who were incarcerated in a state prison or hospital at the time of their initial diagnosis.

The California Institution for Men (CIM) in Chino opened its Del Norte facility to HIV-infected inmates in 1987. The majority of inmates assigned to CIM are from Southern California counties. The California Institution for Women (CIW) in Frontera is one of three penitentiaries for women in California with an HIV unit. Patton State Hospital (PSH) is a forensic psychiatric hospital which accepts HIV-infected patients. The total number of institutional cases reported to date is 393 (CIM=344, CIW=32, PSH=17).

The age distribution presented in table 18 differs from that of the community cases. This is not surprising as one would not expect the very old nor the very young to be represented among those incarcerated.

The proportion of incarcerated Caucasians (see table 19) with AIDS (33%) is much lower than that within the community (52%). The proportion of African Americans with AIDS in the prisons (42%) is much higher than that within the community

**TABLE 18. Institutional AIDS cases by age group, San Bernardino County, 1988-December 31, 1998**

<5	0	0%
5-12	0	0%
13-19	1	<1%
20-29	106	27%
30-39	198	50%
40-49	76	19%
50+	12	3%
<b>Total</b>	<b>393</b>	<b>100%</b>

(20%). The proportion of Latinos with AIDS among the incarcerated (23%) is similar to that reported within the community (26%).

**TABLE 19. Institutional AIDS cases by race/ethnicity, San Bernardino County, 1988-December 31, 1998**

African American	167	42%
Caucasian	129	33%
Latino	91	23%
Asian/Pacific Islander	3	1%
Native American	3	1%
<b>Total</b>	<b>393</b>	<b>100%</b>

\*2 Japanese, 1 unspecified

The risk profile for the institutional cases presented in tables 20 and 21 is also different from that of the community. Seventeen percent of the institutional cases have been associated with sex between men while 56% of the community cases have shared the same risk factor. Forty-four percent of the institutional cases have been attributed to IDU while only 16% of the community cases have been attributed to IDU alone. Thirty-four percent of the institutional cases have reported sex between men in addition to IDU as their probable source of infection in contrast to 9% of the community cases. Two percent of the institutional cases have been associated with heterosexual contact compared to 10% of the community cases.

The distribution of institutional cases by gender also differs from that of the community cases. Ninety-one percent of the institutional cases have occurred among males compared with 85% of the community cases. It is noteworthy that one prisoner incarcerated within CIW underwent a sex-change surgical procedure, thereby explaining the fact that there have been 32 cases reported from CIW, but only 31 have been identified as female. Three females have been reported from PSH.

**TABLE 20. Male institutional AIDS cases by probable source of infection and race/ethnicity, San Bernardino County, 1988-December 31, 1998**

Probable Source of Infection	Race/Ethnicity					Total	Row%
	African Am	Caucasian	Latino	Native Am	Asian/Pac Is		
Injection drug use	51	40	45	2	1	<b>139</b>	39%
Sex between men/IDU	53	54	24	0	2	<b>133</b>	37%
Sex between men	33	22	12	1	0	<b>68</b>	19%
Heterosexual, partner IDU	5	0	1	0	0	<b>6</b>	2%
Heterosexual, partner HIV+	1	1	0	0	0	<b>2</b>	1%
No history obtained/unknown	7	1	3	0	0	<b>11</b>	3%
<b>Total</b>	<b>150</b>	<b>118</b>	<b>85</b>	<b>3</b>	<b>3</b>	<b>359</b>	
Column%	42%	33%	24%	1%	1%		100%

**TABLE 21. Female institutional AIDS cases by probable source of infection and race/ethnicity, San Bernardino County, 1988-December 31, 1998**

Probable Source of Infection	Race/Ethnicity					Total	Row%
	African Am	Caucasian	Latina	Native Am	Asian/Pac Is		
Injection drug use	16	11	6	0	0	33	97%
No history obtained/unknown	1	0	0	0	0	1	3%
<b>Total</b>	<b>17</b>	<b>11</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>34</b>	
Column%	50%	32%	18%	0%	0%		100%

**TABLE 22. Institutional AIDS case annual and cumulative mortality rates by year of report, San Bernardino County, 1983-December 31, 1998**

Year	Reported Cases	Deaths	Fatality Rate	Cumulative Rate
1988	10	10	100%	100%
1989	52	37	71%	76%
1990	27	24	89%	80%
1991	19	15	79%	80%
1992	22	19	86%	81%
1993	117	50	43%	63%
1994	60	20	33%	57%
1995	41	10	24%	53%
1996	31	2	6%	49%
1997	10	5	50%	49%
1998	4	0	0%	49%
<b>Total</b>	<b>393</b>	<b>192</b>		

The annual and cumulative mortality rates for institutionalized cases presented in table 22 are generally lower than those for the community. The observed differences are most likely due to the fact that when inmates are released, the majority are paroled to counties other than San

Bernardino. Such individuals are often lost to follow-up. This problem may be compounded when subsequent death certificates do not contain any reference to HIV or AIDS.

The change in the 1993 surveillance case definition had a similar effect on institutional reporting as it had on community cases. Sixty-one (52%) of the 117 cases reported in 1993 would not have been reported were it not for the expansion of the surveillance case definition.

Table 23 shows the distribution of AIDS defining illnesses for those incarcerated within CIM, CIW and PSH. The frequency of diagnoses with pulmonary tuberculosis is greater among the institutionalized than within the community (see table 9). The implications for disease control within prisons are clear.

**TABLE 23. Institutional AIDS cases by AIDS defining condition, San Bernardino County, 1983-December 31, 1998**

CD4 Lymphocyte count < 200 cells/mm <sup>3</sup>	235	31%
Pneumocystis carinii pneumonia	143	19%
Wasting syndrome due to HIV	94	12%
<i>Mycobacterium tuberculosis</i> , pulmonary	57	7%
Kaposi's sarcoma	35	5%
Candidiasis, esophageal	29	4%
<i>M. tuberculosis</i> , disseminated or extrapulmonary	28	4%
Herpes simplex: Chronic ulcer(s) (>1 month duration)	18	2%
HIV encephalopathy (dementia)	18	2%
<i>M. avium</i> complex or <i>M. kansasii</i> , disseminated extrapulmonary	16	2%
Cryptococcosis, extrapulmonary	15	2%
Candidiasis, bronchi, trachea, or lungs	12	2%
Cytomegalovirus disease (other than in liver, spleen or nodes) onset at >1 month of age	12	2%
Coccidioidomycosis, disseminated or extrapulmonary	9	1%
Toxoplasmosis of brain, onset at >1 month of age	9	1%
Cytomegalovirus retinitis (with loss of vision)	6	1%
Lymphoma, immunoblastic (or equivalent term)	6	1%
Carcinoma, invasive cervical	5	1%
<i>Mycobacterium</i> , of other species or unidentified species, disseminated or extrapulmonary	5	1%
Cryptosporidiosis, chronic intestinal	4	1%
Progressive multifocal leukoencephalopathy	3	<1%
Lymphoma, primary brain	2	<1%
Isosporiasis	1	<1%
Pneumonia, recurrent in a 12 month period	1	<1%
<b>Total Reports of Disease</b>	<b>763</b>	<b>100%</b>
Total Cases	393	

**TABLE 24. AIDS cases by jurisdiction of report, San Bernardino County out-of-county AIDS case registry, 1983-August 13, 1999**

Jurisdiction	Cases	Row %
Alabama	1	<1%
Arizona	8	1%
Arkansas	1	<1%
California	1,142	
Los Angeles	484	39%
Riverside	337	27%
Orange	55	4%
San Diego	55	4%
Kern	35	3%
San Francisco	33	3%
Long Beach	16	1%
San Luis Obispo	16	1%
Marin	14	1%
Solano	14	1%
Alameda	7	1%
Kings	7	1%
Monterey	7	1%
Sonoma	7	1%
Tuolumne	6	<1%
Sacramento	5	<1%
Santa Barbara	5	<1%
Fresno	4	<1%
San Mateo	4	<1%
Ventura	4	<1%
Contra Costa	3	<1%
Imperial	3	<1%
Santa Clara	3	<1%
Del Norte	2	<1%
Lassen	2	<1%
Merced	2	<1%
Pasadena	2	<1%
San Joaquin	2	<1%
Tulare	2	<1%
Amador	1	<1%
Butte	1	<1%
El Dorado	1	<1%
Humboldt	1	<1%
Shasta	1	<1%
Stanislaus	1	<1%
Colorado	5	<1%
Connecticut	1	<1%
Florida	7	1%
Georgia	4	<1%
Hawaii	3	<1%
Illinois	4	<1%
Indiana	2	<1%
Kansas	1	<1%
Louisiana	1	<1%
Maine	1	<1%
Massachusetts	2	<1%
Minnesota	2	<1%
Nebraska	1	<1%
Nevada	17	1%
New Jersey	3	<1%
New York	13	1%
Ohio	1	<1%
Oklahoma	3	<1%
Oregon	4	<1%
Pennsylvania	4	<1%
South Carolina	2	<1%
Tennessee	1	<1%
Texas	13	1%
Virginia	1	<1%
Washington	3	<1%
<b>Total</b>	<b>1,251</b>	<b>100%</b>

## Completeness of Reporting

It is believed that the reporting of AIDS cases within San Bernardino County is very good. The AIDS Program accesses a number of resources for reports of AIDS/HIV disease. These include:

- ☐ Public and Private Hospitals
- ☐ Private Physicians and Community Clinics
- ☐ Other Health Departments
- ☐ Death Certificates
- ☐ AIDS Drug Assistance Program
- ☐ Tumor and Tuberculosis Registries
- ☐ Confidential HIV Antibody Testing Programs
- ☐ Blood Bank Screening Programs
- ☐ Blinded Seroprevalence Studies
- ☐ California Department of Corrections
- ☐ California Department of Health Services, Office of AIDS
- ☐ Centers for Disease Control and Prevention
- ☐ United States Department of Defense

In addition to its local AIDS case registry, the AIDS Program maintains an out-of-county AIDS case registry for people who receive an AIDS diagnosis from a local provider but either reside in another jurisdiction or were previously reported by another jurisdiction (see table 24). Fully 1,251 (32%) of the 3,862 people receiving an AIDS diagnosis within San Bernardino County through August 13, 1999 have been allocated to another jurisdiction.

**TABLE 25. Facilities where 20 or more San Bernardino County AIDS cases have been diagnosed, San Bernardino County, 1983-December 31, 1998**

Name	Number	Row %
San Bernardino County HIV Clinics	777	31%
California Institution for Men	303	12%
Arrowhead Regional Medical Center <sup>1</sup>	258	10%
Kaiser Permanente-Fontana	181	7%
Jerry L Pettis Veterans' Medical Center	90	4%
Riverside County Regional Medical Center <sup>2</sup>	71	3%
Loma Linda University Medical Center	64	3%
San Antonio Community Hospital	48	2%
St. Bernardine Medical Center	47	2%
San Bernardino Community Hospital	28	1%
Pomona Valley Community Hospital	25	1%
Redlands Community Hospital	24	1%
Desert AIDS Project HIV Health Center	21	1%
More than 115 others	566	23%
	<b>2,503</b>	<b>100%</b>

<sup>1</sup> Formerly San Bernardino County Medical Center

<sup>2</sup> Formerly Riverside General Hospital-University Medical Center

The first reported case of AIDS in San Bernardino County was diagnosed at the UCLA Medical Center. Since then, more than 125 hospitals, clinics, or private medical practices have been credited with making diagnoses of AIDS among San Bernardino County residents. Table 25 names

the facilities where 20 or more cases have been In 1983, Filemon Quinio, MD diagnosed the first reported case of AIDS in San Bernardino County. Since then, more than 650 others have made diagnoses of AIDS among San Bernardino County residents. Table 26 lists the names of local physicians who have diagnosed 25 or more cases.

**TABLE 26. Physicians who have diagnosed 25 or more cases of AIDS, San Bernardino County, 1983-December 31, 1998**

Name	Number	Percent
Ryan E Zane, MD	281	11%
Herbert Meyer, MD	238	10%
Christian O Christensen, MD	160	6%
Bessie Hwang, MD, MPH	74	3%
Herbert A Giese Jr, MD, MPH	71	3%
Harvey A Elder, MD, MS	70	3%
Daniel P Gluckstein, MD	57	2%
Bruce E Smith, MD, MPH	42	2%
Richard C Thorsen, MD	41	2%
Charles Salemi, MD	40	2%
Richard Morrissey, MD	37	1%
Steven Larson, MD	29	1%
Ahn Nong, MD	27	1%
More than 650 others	1,336	53%
<b>Total</b>	<b>2,503</b>	

**TABLE 27. Persons investigating 50 or more reported cases of AIDS, San Bernardino County, 1983-December 31, 1998**

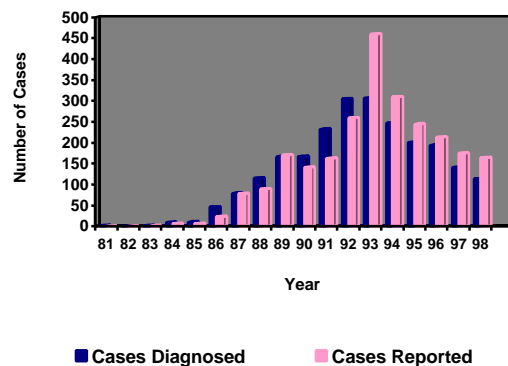
Name	Number	Percent
Diana Y Liu, MPH	407	16%
Linda L Gier	267	11%
Steven R Wyant	261	10%
Alexander F Taylor, MPH	239	10%
Jon C Sherwin, MPH	236	9%
Emmett Resendez	196	8%
Kimberly A Poggemeyer, MPH	150	6%
Lori M Rodriguez	93	4%
Kimberly S Woods	89	4%
Cherie D Torquato, RN	83	3%
Elena O Lingas, MPH	74	3%
Kalpna Shah, MPH	73	3%
Maria C Moody, LVN	68	3%
50 Others	267	11%
<b>Total</b>	<b>2,503</b>	

More than 60 persons have completed investigations of AIDS diagnoses among San Bernardino County residents. Table 27 includes the names of those who have investigated 50 or more cases.

Timeliness of reporting has been an important issue since this epidemic was first recognized. Figure 15 illustrates when cases were diagnosed and reported in San Bernardino County. Prior to 1993, the annual number of cases diagnosed exceeded that which was reported. The expansion of the AIDS surveillance case definition in 1993 allocated diagnoses to prior years but marked the first year where reported cases exceeded

diagnosed.

diagnoses of AIDS. Since then, the number of reported cases has exceeded the number diagnosed. This is explained by the actual decline in persons diagnosed with AIDS and the identification of previously unreported cases. It is anticipated that this pattern will continue until some endemic level of disease is reached and reporting becomes timely and complete. In all likelihood, the former will be realized before the



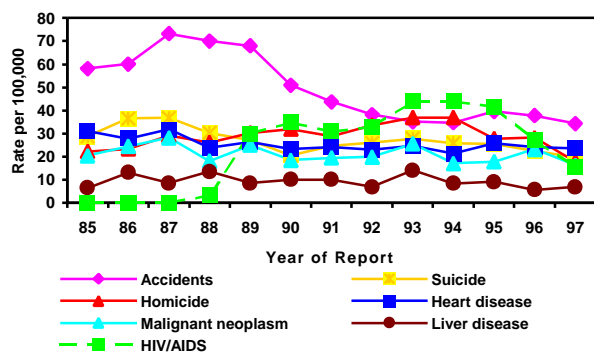
**FIGURE 15. AIDS cases by year of diagnosis and year of report, San Bernardino County, 1981-December 31, 1998**

latter is achieved.

### Leading Causes of Death for Persons 25-44 Years of Age

Figure 16 shows that the number of deaths per 100,000 due to HIV/AIDS has advanced from its position as the seventh leading cause of death among males aged 25-44 years in San Bernardino County in 1985 to the leading cause of death in 1993. It remained the leading cause of death from 1993 through 1995, inclusive, but fell to the third leading cause of death in 1996. This is in all likelihood due to the introduction of highly active antiretroviral therapy (HAART). In 1997, the age specific death rate decreased by 42% from the previous year and AIDS declined to the sixth leading cause of death for males aged 25-44. Mortality data for 1998 are not yet available.

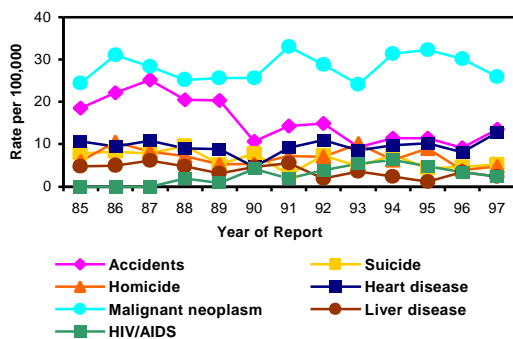
Figure 17 shows that the number of deaths per 100,000 due to HIV/AIDS moved from its position as the seventh leading cause of death among females aged 25-44 years in San Bernardino County in 1985 to the fifth leading cause of death in 1994. In 1995, deaths from HIV/AIDS dropped to sixth as a leading cause of



**FIGURE 16. Leading causes of death per 100,000 males aged 25-44 years, San Bernardino County, 1985–December 31, 1997**

years. In 1997, AIDS was tied with chronic liver disease as the tenth leading cause of death for females aged 25-44 in San Bernardino County. It is important from a public health perspective to recognize that malignant neoplasms, accidents, heart disease, suicide, homicide, drug dependence, cerebrovascular disease and diabetes mellitus all exceed HIV/AIDS as a cause of death for San Bernardino County women aged 25-44 years.

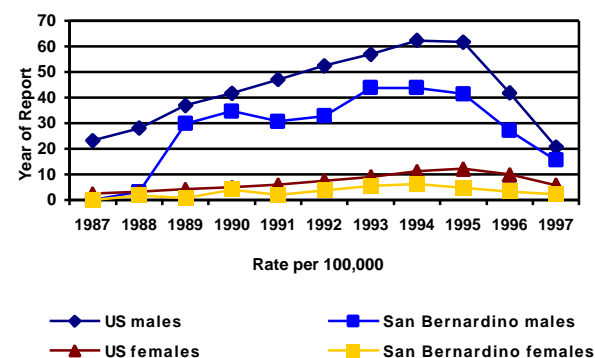
Figure 18 indicates that between 1987 and 1992,



**FIGURE 17. Leading causes of death per 100,000 females aged 25-44 years, San Bernardino County, 1985–December 31, 1997**

inclusive, the HIV/AIDS related death rate per 100,000 United States males aged 25-44 was approximately twice that for San Bernardino County males within the same age group. While the corresponding death rates were much lower for women aged 25-44, the proportional difference between United States and San Bernardino County females approximated that observed among males. Between 1993 and 1997, inclusive, the annual

death, and dropped further in 1996 to the eighth leading cause of death among females aged 25-44



**FIGURE 18. AIDS deaths/100,000, aged 25-44 years by gender, San Bernardino County and the United States, 1987-1997**

HIV/AIDS related death rate for San Bernardino County males aged 25-44 was approximately 75% of that for United States males within the same age group. The death rate for San Bernardino County females aged 25-44 remained approximately one-half that for their United States counterparts.

## HIV Clinic

The San Bernardino County HIV Clinic offered its first, four-hour block of outpatient medical care in the city of San Bernardino (east valley health region) on Thursday, March 29, 1990. Services include adult and pediatric medical examination, evaluation and treatment; tuberculosis screening and treatment; radiology; laboratory services (including flow cytometry to measure CD4 cell counts, quantitative polymerase chain reaction to measure extracellular viral RNA, HIV-1 genotyping and HIV-1 phenotyping assays for drug resistance); pharmacy and access to the AIDS Drug Assistance Program; referral for biomedical research; referral for treatment or procedures which exceed the clinic's scope of service; referral for dental examination and follow-up care; psychosocial evaluation and counseling; immunizations; health education and behavior change support; enhanced medication



education to promote improved adherence to complex treatment regimens; family planning and maternal health services; nutritional assessment and counseling; WIC vouchers for eligible comprehensive health and support service plan, benefits counseling, and assistance and advocacy in finding needed services. It became readily apparent that four hours of service per week were insufficient to meet the demand for care. The clinic was expanded to eight hours of outpatient care per week on Thursday, June 7, 1990. The AIDS Program was successful in securing Title III(b) funds under the Ryan White Comprehensive AIDS Resources Emergency Act of 1990 and added another four hours of clinical services per week beginning Wednesday, October 9, 1991. On Monday, June 8, 1992 a fourth four hour block of weekly outpatient care was added using Title III(b) funds. Two, four-hour blocks of services per week were added in Hesperia (desert health planning region) on July 2, 1993. On January 6, 1995, a four hour block of clinical services per week was added in Chino (west valley health planning region). In response to the growing number of clients entering or re-entering the work force, a two hour block of evening clinical services was added each week in San Bernardino beginning March 23, 1999.

Between January 1, 1998 and December 31, 1998, 111 new patients were enrolled in the San Bernardino County HIV Clinic. The total number enrolled to date is 1,865, and there have been 35,363 patient visits.

Table 28 shows that the annual number of new HIV clinic enrollees has varied (mean=207, standard deviation=58.2) over the first nine years of service. The number of patient visits increased dramatically between 1990 and 1992, inclusive. It is interesting that while the number of enrollees decreased from 1992 through 1998, the demand for service has remained relatively stable in terms of total visits. There is no reason to believe that the patient population will require less care over the next several years.

**TABLE 28. Annual HIV clinic enrollees and visits, San Bernardino County, March 29, 1990-December 31, 1998**

Year	New Patients	Enrollments per Month	Active Patients	Patient Visits	Visits per Month
1990	274	30	274	1,679	187
1991	231	19	455	2,917	243
1992	290	24	608	4,710	393
1993	238	20	667	4,563	380

children and females; substance abuse counseling, treatment, and referral if indicated; and case management for the development of a

1994	215	18	682	4,960	413
1995	168	14	650	4,430	369
1996	184	15	671	3,931	328
1997	154	13	664	4,019	335
1998	111	9	673	4,154	346
<b>Total</b>	<b>1,865</b>	<b>0=18</b>	<b>0=594</b>	<b>35,363</b>	<b>0=337</b>

In fact, the number of new enrollees and the increasing complexity of the care for this disease suggest that even more service will be rendered in the future.

When examining the data in tables 29-40 it is important to recognize that these clients do not necessarily have an AIDS defining condition. In fact, many are asymptomatic. These data have the distinct advantage of permitting health care providers and planners to assess HIV-infected individuals from an epidemiological, clinical and laboratory perspective without having to wait for the development of an AIDS defining condition.

Tables 29 and 30 indicate that sex between men has been the probable source of infection for 1,018 (55%) of the 1,865 clients who have been enrolled. Three hundred and fifty-one (19%) of the clients have had their infection attributed to heterosexual contact. IDU alone has been the probable source of infection for 283 (15%) of those under care. One hundred and seventy (9%) of the clients have had their infection associated with sex between men in addition to IDU.

Table 31 indicates that the age distribution of those served in these clinics is about the same for both sexes with the exception of two age groups. Thirty-four percent of the female clients are 20-29 years old compared with 29% of the males. Sixty-six percent of the males are 30-49 years old while the corresponding proportion for females is 59%.

Table 32 demonstrates that these clinics have attracted patients from throughout Southern California. Of those receiving care, 330 (18%) reside in counties other than San Bernardino. This observation suggests that the clinics are accessible and acceptable to a considerable number of non-San Bernardino County residents. However, it is known from other sources that many San Bernardino County residents receive their HIV-related care in neighboring jurisdictions

suggesting that migration may not be primarily for the accessibility and acceptability of medical care and related services.

Table 33 indicates that 907 (49%) of the clients are African American, Latino, Asian/Pacific Islander or Native American. This distribution is similar to the proportion of AIDS cases among

**TABLE 29. Male HIV clinic clients by race/ethnicity and probable source of infection, San Bernardino County, March 29, 1990-December 31, 1998**

Probable Source of Infection	Race/Ethnicity							Total	Row %
	Caucasian	Latino	African Am	Asian/Pac	Native Am	Other			
Sex between men	580	265	147	8	10	8		<b>1,018</b>	66%
Injection drug use	79	50	51	2	0	1		<b>183</b>	12%
Sex between men/IDU	112	29	23	1	4	1		<b>170</b>	11%
Heterosexual contact	37	63	47	3	1	2		<b>153</b>	10%
Transfusion	6	3	3	1	0	0		<b>13</b>	1%
Receipt of factor concentrate	1	2	0	1	0	0		<b>4</b>	<1%
Perinatal transmission	1	0	0	0	0	0		<b>1</b>	<1%
History not obtained/unknown	0	0	1	0	0	0		<b>1</b>	<1%
<b>Total</b>	<b>816</b>	<b>412</b>	<b>272</b>	<b>16</b>	<b>15</b>	<b>12</b>		<b>1,543</b>	
Column %	53%	27%	18%	1%	1%	1%			100%

**TABLE 30. Female HIV clinic clients by race/ethnicity and probable source of infection, San Bernardino County, March 29, 1990-December 31, 1998**

Probable Source of Infection	Race/Ethnicity							Total	Row %
	Caucasian	African Am	Latina	Asian/Pacific Is	Native Am	Other			
Heterosexual contact	73	82	42	0	1	0		<b>198</b>	61%
Injection drug use	50	27	23	0	0	0		<b>100</b>	31%
Transfusion	3	3	10	1	0	1		<b>18</b>	6%
Perinatal transmission	2	2	1	0	0	0		<b>5</b>	2%
Receipt of factor concentrate	1	0	0	0	0	0		<b>1</b>	<1%
<b>Total</b>	<b>129</b>	<b>114</b>	<b>76</b>	<b>1</b>	<b>1</b>	<b>1</b>		<b>322</b>	
Column %	40%	35%	24%	<1%	<1%	<1%			100%

**TABLE 31. HIV clinic clients by gender and age group on admission, San Bernardino County, March 29, 1990-December 31, 1998**

		Gender					
		Male	Row %	Female	Row %	Total	Row %
0-9		1	<1%	3	1%	4	<1%
10-19		12	1%	9	3%	21	1%
20-29		440	29%	109	34%	549	29%
30-39		729	47%	141	44%	870	47%
40-49		286	19%	47	15%	333	18%
50-59		62	4%	12	4%	74	4%
60+		13	1%	1	<1%	14	1%
Total		1,543		322		1,865	
Column %		83%		17%			100%

**TABLE 32. HIV clinic clients by gender and county of residence, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
San Bernardino	1,255	81%	280	87%	1,535	82%
Riverside	170	11%	30	9%	200	11%
Los Angeles	100	6%	12	4%	112	6%
Orange	2	<1%	0	0%	2	<1%
Imperial	2	<1%	0	0%	2	<1%
Kern	2	<1%	0	0%	2	<1%
San Diego	2	1%	0	0%	2	<1%
Contra Costa	1	<1%	0	0%	1	<1%
Sacramento	1	<1%	0	0%	1	<1%
Out of State	8	1%	0	0%	8	<1%
Total	1,543		322		1,865	
Column %	83%		17%			100%

**TABLE 33. HIV clinic clients by gender and racial/ethnic distribution, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
Caucasian	816	53%	129	40%	945	51%
Latino	412	27%	76	24%	488	26%
African American	272	18%	114	35%	386	21%
Asian/Pacific Islander	16	1%	1	<1%	17	1%
Native American	15	1%	1	<1%	16	1%

Other	12	1%	1	<1%	13	1%
<b>Total</b>	<b>1,543</b>		<b>322</b>		<b>1,865</b>	
Column %	83%		17%			100%

**TABLE 34. HIV clinic clients by gender and CDC stage on admission, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
Asymptomatic, CD4 $\geq$ 500	278	18%	83	26%	361	19%
Symptomatic/not AIDS, CD4 $\geq$ 500	22	1%	13	4%	35	2%
AIDS, CD4 $\geq$ 500	4	<1%	0	0%	4	<1%
Asymptomatic, CD4 = 200-499	317	21%	81	25%	398	21%
Symptomatic/not AIDS, CD4 = 200-499	120	8%	21	7%	141	8%
AIDS, CD4 = 200-499	69	4%	15	5%	84	5%
Asymptomatic, CD4 # 199	58	4%	15	5%	73	4%
AIDS, CD4 # 199	674	44%	94	29%	768	41%
Not applicable ( < 13 years old)	1	<1%	0	0%	1	<1%
<b>Total</b>	<b>1,543</b>		<b>322</b>		<b>1,865</b>	
Column %	83%		17%			100%

**TABLE 35. HIV clinic clients by gender and CD4 cell count on admission, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
# 200 cells/mm <sup>3</sup>	733	48%	109	34%	842	45%
201-500 cells/mm <sup>3</sup>	506	33%	117	36%	623	33%
>500 cells/mm <sup>3</sup>	304	20%	96	30%	400	21%
<b>Total</b>	<b>1,543</b>		<b>322</b>		<b>1,865</b>	
Column %	83%		17%			100%

people of color within the community. In addition, female clients under care are more likely to be African American than are male patients.

Table 34 indicates that the males under care are more likely to present with more advanced stages of HIV disease than are females. This finding is most likely due to the males having been infected longer than their female counterparts. This may also reflect increased efforts to reach women at risk and offer counseling, testing and primary medical care.

Table 35 suggests that the majority of the patients under care have been infected for some time. Of those tested, 1,465 (79%) qualified for highly active antiretroviral therapy (HAART) on admission based on a CD4 cell count  $\geq$  500/mm<sup>3</sup>. It must be understood that levels of extracellular viral RNA are considered in conjunction with CD4 cell counts prior to the initiation of HAART. Further, 842 (45%) qualified for anti-*Pneumocystis* prophylaxis on admission as a result of CD4 cell counts  $\geq$  200 cells/mm<sup>3</sup>. These data show that the males under care are over represented within the lowest range of CD4 cell counts on admission. This may be due to their having been infected longer than the females served in the clinics. It also suggests that the AIDS Program is finding infected women before

they reach advanced states of immunodeficiency. This is important in view of national concerns that HIV disease among women has been neglected.

Table 36 presents baseline measures of extracellular viral RNA in copies/mm<sup>3</sup> beginning September 27, 1995. Current recommendations suggest that fewer than 50 copies/mm<sup>3</sup> are indicative of successful HAART. Clients with 51-20,000 copies/mm<sup>3</sup> are carefully evaluated for HAART. Clients with more than 20,000 copies/mm<sup>3</sup> are immediate candidates for HAART. Further, clients whose symptoms are attributable to HIV are also considered as candidates for HAART. These data would indicate that at least 492 (56%) of the 876 clients provided with baseline testing between September 27, 1995 and December 31, 1998 were immediate candidates for HAART.

**TABLE 36. HIV clinic clients by baseline number of copies of extracellular viral RNA/mm<sup>3</sup>, San Bernardino County, September 27, 1995-December 31, 1998**

Copies of viral RNA	Clients	Row%
0-50	8	1%
51-20,000	376	43%
20,001-100,000	205	23%
100,001+	287	33%
<b>Total</b>	<b>876</b>	<b>100%</b>

The client's need for mental health counseling is determined jointly by a licensed mental health professional, the attending physician, and the

patient. Table 37 shows that the females under care are more likely to require crisis intervention or ongoing counseling on admission than are male patients. This speaks to the need to continue to Table 38 shows that the most frequently reported source of referral for clinic patients is word of mouth (24%), which is followed by referrals from private physicians (21%), anonymous testing programs (16%), and community AIDS service organizations (15%). This would suggest that the clinics have a positive reputation among those living with HIV, the private medical community, as well as community based AIDS service organizations.

Table 39 shows that 1,403 (75%) of the clients were unemployed. Male clients under care are more likely to be employed on a full time basis than are females. It is noteworthy that many of

provide on-site counseling which can satisfactorily address women's issues and concerns.

the employed clients eventually become medically unable to work and are forced to quit their jobs.

Table 40 presents the health insurance status for the clinic clients. It is not surprising that given the employment profile of the clients, 975 (52%) of the 1,865 have had no medical insurance. Females under care are more likely to be publicly insured than males. This may be explained by the fact that low income women with children generally qualify for Medi-Cal benefits regardless of the mother's health status. Six hundred and sixty (74%) of the 890 clients who have had some type of health insurance have been covered by Medi-Cal.

**TABLE 37. HIV clinic clients by gender and counseling need, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
Crisis intervention	771	50%	178	55%	949	51%
Ongoing counseling	133	9%	38	12%	171	9%
No immediate need	639	41%	106	33%	745	40%
<b>Total</b>	<b>1,543</b>		<b>322</b>		<b>1,865</b>	
Column %	83%		17%			100%

**TABLE 38. HIV clinic clients by gender and source of referral, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
Word of mouth	375	24%	70	22%	445	24%
Private physician	309	20%	76	24%	385	21%
Anonymous test site	249	16%	51	16%	300	16%
Community AIDS service organizations	246	16%	35	11%	281	15%
Department of Public Health	119	8%	23	7%	142	8%
Other	45	3%	10	3%	55	3%
Other early intervention program	39	3%	8	2%	47	3%
Other HIV antibody testing program	29	2%	16	5%	45	2%
Correctional facility	40	3%	4	1%	44	2%
Friend/family	32	2%	6	2%	38	2%
Advertisement	12	1%	6	2%	18	1%
Sex partner	16	1%	2	1%	18	1%
Emergency room	12	1%	2	1%	14	1%
Private hospital	8	1%	4	1%	12	1%
Drug/alcohol treatment center	5	<1%	6	2%	11	1%
Public assistance program	4	<1%	2	1%	6	<1%
Clinical trial	3	<1%	1	<1%	4	<1%
<b>Total</b>	<b>1,543</b>		<b>322</b>		<b>1,865</b>	
Column %	83%		17%			100%

**TABLE 39. HIV clinic clients by gender and employment status, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
Full-time employment	277	18%	25	8%	302	16%
Part-time employment	130	8%	24	7%	154	8%
Unemployed	1,131	73%	272	84%	1,403	75%
Other	5	<1%	1	<1%	6	<1%
<b>Total</b>	<b>1,543</b>		<b>322</b>		<b>1,865</b>	
Column %	83%		17%			100%

**TABLE 40. HIV clinic clients by gender and health insurance status, San Bernardino County, March 29, 1990-December 31, 1998**

	Gender					
	Male	Row %	Female	Row %	Total	Row %
Medi-Cal	492	32%	168	52%	660	35%

Private insurance	175	11%	15	5%	190	10%
Medicare	28	2%	6	2%	34	2%
Other insurance (ie VA, CHAMPUS)	6	<1%	0	0%	6	<1%
None	842	55%	133	41%	975	52%
Total	1,543		322		1,865	
Column %	83%		17%			100%

## AIDS Drug Assistance Program

In the fall of 1987, the Department of Public Health elected to participate in the California Department of Health Services, AIDS Drug Assistance Program (ADAP). Initially, only zidovudine was made available to low income

persons living with HIV. Since then, 111 other drugs and drug combinations have been added to the ADAP formulary (see table 41).

San Bernardino County has enrolled 1,617 persons into ADAP between 1987 and December 31, 1998, inclusive.

**TABLE 41. AIDS Drug Assistance Program formulary and indications for use, California 1998**

	Generic Name	Trade Name(s)	Date	Indications for Use
1	abacavir	Ziagen	Dec 1998	nucleoside analog for HIV
2	acyclovir	Zovirax	Apr 1994	herpes simplex virus (HSV)
3	albendazole	Albenza	Sep 1998	anti helminthic
4	alpha interferon	Intron-A, Roferon-A	Mar 1995	Kaposi's sarcoma (KS), hepatitis B,
5	amphotericin b	Fungizone	Apr 1994	fungal infections
6	amitriptyline hydrochloride	Elavil	Sep 1998	antidepressant
7	amoxicillin trihydrate	Amoxill	Sep 1998	antibiotic
8	atovaquone	Mepron	Apr 1994	Pneumocystis carinii pneumonia (PCP)
9	azithromycin	Zithromax	Apr 1994	Mycobacterium avium complex (MAC) prophylaxis and treatment
10	bleomycin sulfate	Blenoxane	Mar 1995	lymphoma, advanced KS
11	bupropion hydrochloride	Zyban, Wellbutrin	Sep 1998	antidepressant & smoking cessation
12	cephalexin	Keflex	Sep 1998	antibiotic
13	cidofovir	Vistide	Apr 1997	cytomegalovirus (CMV), HSV, genital warts
14	clarithromycin	Biaxin	Apr 1994	MAC prophylaxis and treatment, upper respiratory infections (URI)
15	clindamycin	Cleomycin	Nov 1991	PCP prophylaxis and treatment, pelvic inflammatory disease (PID), toxoplasmosis encephalitis
16	clofazamine	Lamprene	Apr 1994	MAC
17	clotrimazole	Lotrimin, Mycelex	Apr 1992	candidiasis
18	codeine phosphate		Sep 1998	pain control
19	codeine phosphate/acetaminophen	Tylenol w/codeine	Sep 1998	pain control
20	codeine phosphate/aspirin	Empirin	Sep 1998	pain control
21	codeine sulfate	Oral generic	Sep 1998	pain control
22	cyclophosphamide	Cytoxan	Mar 1995	neoplasms
23	dapsone	Avlosulfon	Nov 1991	PCP prophylaxis
24	delavirdine	Rescriptor	Jul 1997	
25	desipramine hydrochloride	Generic	Sep 1998	antidepressant
26	dexamethasone	Decadron, Hexadrol	Mar 1995	anti-inflammatory
27	dicloxacillin sodium	Diclox	Sep 1998	antibiotic
28	didanosine	ddi, Videx	Nov 1991	nucleoside analog for HIV
29	diphenoxylate hydrochloride/ atropine sulfate	Lomotil	Sep 1998	diarrhea
30	doxorubicin	Ariamycin	Mar 1995	KS and lymphoma
31	doxycycline hyclate	Oral generic	Sep 1998	antibiotic
32	dronabinol	Marinol	Mar 1995	nausea, vomiting, anorexia
33	efavirenz	Sustiva	Dec 1998	non-nucleoside reverse trans inhibitor
34	epoetin alfa	Epogen, Procrit	Mar 1995	red blood cell anemia
35	erythromycin base	Oral generic	Sep 1998	antibiotic
36	erythromycin ethylsuccinate	Generic	Sep 1998	antibiotic
37	ethambutol	Myambutol	Apr 1994	Mycobacterium tuberculosis (TB), MAC
38	fenoprofen calcium	Nalfon	Sep 1998	pain control
39	fentanyl patch	Duragesic	Sep 1998	pain-control
40	filgrastim	Neupogen	Mar 1995	white blood cell anemia
41	fluconazole	Diflucan	Apr 1992	fungal infections
42	flucytosine	5FC, Ancobon	Apr 1994	fungal infections
43	fluoxetine hydrochloride	Prozac	Sep 1998	anti-depressant
44	foscarnet	Foscavir	Apr 1994	CMV retinitis, HSV
45	ganciclovir	Cytovene	Nov 1991	CMV retinitis, HSV
46	hepatitis B virus vaccine	Energix, Recombivax	Sep 1998	prevention of Hepatitis B infection
47	hydrocodone bitartrate/acetaminophen	Generic	Sep 1998	pain control
48	hydrocodone hydrochloride	Oral generic	Sep 1998	paint control

49	hydroxyurea	Hydrea	Apr 1998	anti neoplastic, and adjuvant treatment for
50	ibuprofen-prescription strength	Motrin	Sep 1998	pain control
51	ibuprofen/hydrocodone bitartrate	Vicoprofen	Sep 1998	pain control
52	indinavir	Crixivan	Jul 1996	protease inhibitor for HIV
53	indomethacin	Indocin	Sep 1998	anti inflammatory
54	itraconazole	Sporanox	Mar 1995	fungal infections
55	ketoconazole	Nizoral	Apr 1992	fungal infections
56	ketoprofen	Orudis	Sep 1998	anti inflammatory

**TABLE 41. Continued**

57	lamivudine	3tc, Epivir	Apr 1996	Nucleoside analog for HIV
58	lamivudine/zidovudine	Combivir	Oct 1997	Nucleoside analog for HIV
59	leucovorin calcium	Leucovorin	Mar 1995	White blood cell anemia
60	levorphenol tartrate	Levodromoran	Sep 1998	pain control
61	liposomal daunorubicin	DaunoXome	Jul 1997	KS
62	loperamide hydrochloride	Imodium	Sep 1998	diarrhea
63	megestrol acetate	Megace	Mar 1995	wasting syndrome, anorexia
64	methadone hydrochloride	Oral generic	Sep 1998	pain control
65	metronidazole	Flagyl	Sep 1998	antibiotic
66	methotrexate	Reumatrex, Folex	Mar 1995	neoplasms
67	minocycline hydrochloride	Oral generic	Sep 1998	antibiotic
68	morphine sulfate	Oral generic	Sep 1998	pain control
69	nandrolone decanoate	Decadurobovin	Sep 1998	HIV wasting
70	nandrolone phenpropionate		Sep 1998	HIV wasting
71	naproxen	Naprosyn	Sep 1998	pain control
72	nefazodone hydrochloride	Serzone	Sep 1998	antidepressant
73	nelfinavir	Viracept	May 1997	protease inhibitor for HIV
74	neomycin sulfate	Oral generic	Sep 1998	topical antibiotic
75	nevirapine	Viramune	Apr 1997	non-nucleoside reverse transcriptase inhibitor for HIV
76	nortriptyline hydrochloride	Pamelor	Sep 1998	antidepressant
77	nystatin	Mycostatin	Nov 1991	fungal infections
78	opium, tincture of	Paragoric	Sep 1998	diarrhea
79	oxandrolone	Oxandrin	Sep 1998	HIV wasting
80	oxycodone	Oral generic	Sep 1998	pain control
81	oxycodone acetaminophen	Oral generic	Sep 1998	pain control
82	oxycodone/aspirin	Oral generic	Sep 1998	pain control
83	paclitaxel	Taxol	Sep 1998	anti-neoplastic (KS)
84	paromomycin	Humatin	Apr 1994	cryptosporidiosis
85	pentamidine isethionate	NebuPent, Pentam	Mar 1989	PCP prophylaxis and treatment
86	paroxetine hydrochloride	Paxil	Sep 1998	anti depressant
87	penicillin V potassium	Oral generic	Sep 1998	antibiotic
88	pneumococcal vaccine	Pneumovax	Sep 1998	pneumococcus protection
89	prednisone	DeltaSone, Orasone	Mar 1995	anti-inflammatory
90	pyrimethamine	Daraprim	Nov 1991	toxoplasmosis
91	rifabutin	Mycobutin	Apr 1994	MAC prophylaxis and treatment
92	ritonavir	Norvir	Jul 1996	protease inhibitor for HIV
93	saquinavir mesylate	Invirase, Fortovase	Jul 1996	protease inhibitor for HIV
94	sertraline	Zoloft	Sep 1998	antidepressant
95	stavudine	d4t, Zerit	Mar 1995	nucleoside analog for HIV
96	sulfadiazine	Microsulton	Nov 1991	urinary tract infections (UTI), chancroid, trachoma
97	sulfamethoxazole-trimethoprim	Bactrim DS, Septra	Nov 1991	PCP prophylaxis and treatment
98	sulindac	Clinoral	Sep 1998	pain control
99	testosterone cypionate	Virilon	Sep 1998	HIV wasting
100	testosterone enanthate	Delatestryl	Sep 1998	HIV wasting
101	testosterone propionate		Sep 1998	HIV wasting
102	tetracycline hydrochloride	Oral generic	Sep 1998	antibiotic
103	trazodone hydrochloride	Desyrel	Sep 1998	antidepressant
104	trimethoprim	Proloprim, Trimpex	Mar 1995	UTI
105	trimetrexate glucuronate	NeuTrexin	Mar 1995	PCP
106	valacyclovir	Valtrex	Sep 1998	HSV infection
107	vancomycin hydrochloride	Oral generic	Sep 1998	antibiotic
108	venlafaxine hydrochloride	Effexor	Sep 1998	antidepressant
109	vinblastine sulfate	Velban	Mar 1995	neoplasms
110	vincristine sulfate	Oncovin	Mar 1995	neoplasms
111	zalcitabine	ddc, HIVID	Dec 1993	nucleoside analog for HIV
112	zidovudine	ZDV, AZT, Retrovir	Oct 1987	nucleoside analog for HIV

**TABLE 42. ADAP clients by gender and year of enrollment, San Bernardino County, 1987-December 31, 1998**

Year	Male	Female	Total	Row %
1987	2	0	2	<1%
1988	64	5	69	4%
1989	81	7	88	5%
1990	157	16	173	11%
1991	91	12	103	6%

1992	150	24	174	11%
1993	181	27	208	13%
1994	117	19	136	8%
1995	130	10	140	9%
1996	154	18	172	11%
1997	142	37	179	11%
1998	142	31	173	11%
<b>Total</b>	<b>1,411</b>	<b>206</b>	<b>1,617</b>	<b>100%</b>

Table 42 indicates that enrollment in ADAP has remained relatively stable from 1990 to the present. The dramatic change between 1989 and 1990 corresponds with the development and implementation of the San Bernardino County HIV clinics.

percent of ADAP clients were 20-39 years of age on enrollment while 64% of the community AIDS cases have been 20-39 years old at the time of diagnosis. The gender distribution of ADAP enrollees is comparable to that for community AIDS cases (see table 13).

The data presented in table 44 indicate that those enrolled in ADAP are representative of the community AIDS cases in terms of race/ethnicity with the exception of African Americans. African Americans constitute 20% of the community AIDS cases and 16% of ADAP clients. The underutilization of ADAP by persons of African descent has been reported elsewhere in the state.

**TABLE 43. ADAP clients by gender and age on enrollment, San Bernardino County, 1987-December 31, 1998**

Year	Male	Female	Total	Row %
0-9	1	2	3	<1%
10-19	11	3	14	1%
20-29	354	57	411	25%
30-39	668	100	768	47%
40-49	283	31	314	19%
50-59	72	11	83	5%
60+	22	2	24	1%
<b>Total</b>	<b>1,411</b>	<b>206</b>	<b>1,617</b>	
Col%	87%	13%		100%

**TABLE 44. ADAP clients by gender and race/ethnicity, San Bernardino County 1987-December 31, 1998**

	Male	Female	Total	Row %
Caucasian	775	79	854	53%
Latino	376	59	435	27%
African American	197	59	256	16%
Native American	12	1	13	1%
Asian/Pacific Islander	10	0	10	1%
Other	8	1	9	1%
Unknown	33	7	40	2%
<b>Total</b>	<b>1,411</b>	<b>206</b>	<b>1,617</b>	
Col %	87%	13%		100%

**TABLE 45 ADAP clients by gender and county of residence, San Bernardino County, 1987-December 31, 1998**

	Male	Female	Total	Row %
San Bernardino	1,135	173	1,308	81%
Los Angeles	141	18	159	10%
Riverside	114	12	126	8%
San Diego	5	1	6	<1%
Sacramento	5	1	6	<1%
Orange	5	0	5	<1%
Imperial	2	0	2	<1%
Kern	1	0	1	<1%
El Dorado	0	1	1	<1%
Sonoma	1	0	1	<1%

Table 43 suggests greater acceptance of ADAP among younger people living with HIV when compared with the age distribution of persons diagnosed with AIDS (see table 5). Seventy-two

Out of state	2	0	2	<1%
<b>Total</b>	<b>1,411</b>	<b>206</b>	<b>1,617</b>	
Col%	87%	13%		100%

Table 45 indicates that the local ADAP has served clients from throughout Southern California. This may be due to the fact that San Bernardino County made medications available through the mail between 1987 and 1997. The immense size of the county and the reluctance of many pharmacies to participate in ADAP made it necessary to develop an alternative service delivery system. The United States Postal Service proved to be an acceptable alternative.

In 1997, the California Department of Health Services, Office of AIDS centralized ADAP through a pharmacy benefits management service provider with an existing network of more than 1,500 pharmacies statewide. This provided an immediate improvement in access for persons living with HIV. Since then, the provider has continued to enroll eligible pharmacies into ADAP. Currently, there are more than 2,600 participating pharmacies in California. In addition to increasing access, the centralization of administration has also improved the efficiency of ADAP.

## Anonymous HIV Testing Program

The San Bernardino County Department of Public Health established an anonymous HIV antibody counseling and testing program in 1985. Anonymous testing is offered in the cities of San Bernardino, Chino, Barstow and Hesperia. Service includes an explanation of the test procedure and meaning of the results; recording of demographic variables and risk assessment; provision of information on HIV transmission, prevention, and strategies for behavior change; development of a risk reduction plan; collection of a laboratory specimen; and distribution of condoms and educational materials. All who test positive are offered medical care and support services through the AIDS Program's HIV clinics

or they are encouraged to seek care through the private medical community.

Between January 1, 1998 and December 31, 1998, 3,185 specimens were tested anonymously. Of those, 20 (0.6%) were found to have serologic evidence of HIV infection. It is important to recognize that those individuals found to have

**TABLE 46. Anonymous HIV antibody test results by race/ethnicity, San Bernardino County, April 1, 1988-December 31, 1998**

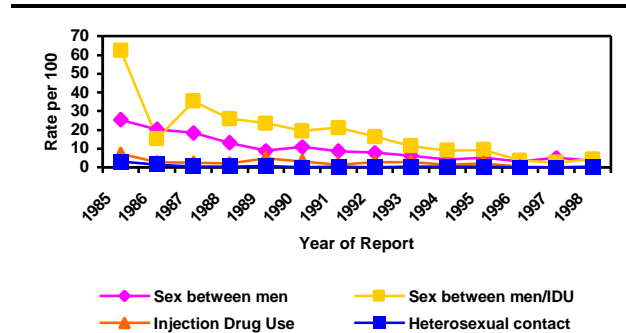
Race/Ethnicity	Positive	Tested	Rate/100
African American	118	4,990	2.4
Latino	172	10,827	1.6
Caucasian	381	30,432	1.3
Native American	3	321	0.9
Asian/Pacific Is.	9	1,209	0.7
Other/Unknown	20	1,109	1.8
<b>Total</b>	<b>703</b>	<b>48,888</b>	<b>1.4</b>

The data in table 46 indicate that of those presenting for anonymous testing between April 1, 1988 and December 31, 1998, 62% were Caucasian, 22% were Latino, 10% were African American, 2% were Asian/Pacific Islander, 1% were Native American and 2% were classified as "other or unknown". It is important to acknowledge that these data do not necessarily reflect unduplicated clients. The prevalence of HIV infection among specimens submitted by African Americans tested was 1.8 times that for Caucasians and 1.5 times that for Latinos. These data support the need for increased outreach and prevention education targeted toward African Americans who engage in behaviors that place them at increased risk for HIV infection.

Table 47 indicates that sex between men and/or IDU were associated with 799 (77%) of the 1,044 infections identified during the entire period of this program. Since histories are obtained at the time of initial testing, these data might underestimate the actual prevalence of these risk behaviors. However, these data do support the continued need for effective outreach to encourage testing for all persons who engage in behaviors which place them at increased risk for HIV infection.

Figure 19 indicates that the seroprevalence among those tested anonymously who reported sex between men as their only risk factor declined gradually from 25.5% in 1985 to 8.9% in 1989.

positive test results represent HIV infections and not necessarily cases of AIDS. The total number of specimens tested anonymously by the AIDS Program since June 1, 1985 is 55,133 (see table 47).



**FIGURE 19. Annual HIV seroprevalence by selected risk factors among those presenting to anonymous test sites, San Bernardino County, June 1, 1985-December 31, 1998**

Between 1990 and 1996, inclusive, the seroprevalence declined from 11% to 3.3%. The annual seroprevalence increased to 5.1% in 1997, and decreased to 3.6% in 1998. This rate of infection speaks to the continued need to provide prevention education to men who have sex with men.

The rate of HIV infection among IDUs tested declined from 7.1% in 1985 to 0.0% in 1997. In 1998, the rate among IDUs increased to 0.6% (n=1).

The seroprevalence rate among those who reported sex between men in addition to IDU as risk factors declined from 62.5% in 1985 to 2.5% in 1997. In 1998, the annual seroprevalence among men who have sex with men in addition to IDU increased to 4.5%. It is important to note that the sample size is rather small and, as a result, the seroprevalence is subject to considerable variability when infections are identified.

The seroprevalence among those who reported heterosexual contact as their sole risk factor has remained remarkably low (less than 1% between 1987 and December 31, 1998, inclusive).

**TABLE 47. Anonymous HIV antibody test results by risk factor, San Bernardino County, June 1, 1985-December 31, 1998**

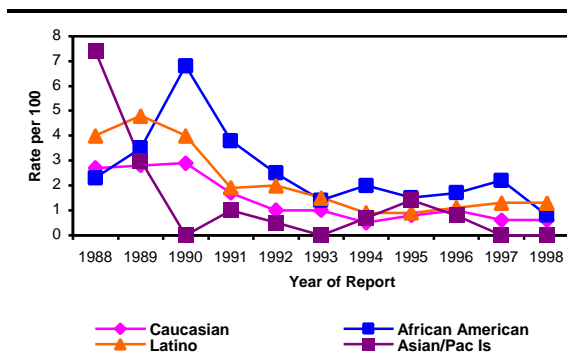
Risk Factor	# Positive	# Tested	Rate/100
Receipt of factor concentrate	7	14	50.0



Sex between men/IDU	70	425	16.5
Sex between men	644	6,936	9.3
Injection drug use	85	3,809	2.2
Prostitute	1	100	1.0
Sex partner of a high risk individual	128	16,575	0.8
Transfusion	11	1,393	0.8
Heterosexual with multiple partners	54	18,783	0.3
Occupational exposure	0	617	0.0
No risk stated	29	5,150	0.6
Unknown	15	1,331	1.1
<b>Total</b>	<b>1,044</b>	<b>55,133</b>	<b>1.9</b>

It is essential to recognize that those presenting for anonymous testing are highly self-selected and have some perception of their personal risk for HIV infection.

Figure 20 indicates that the annual seroprevalence among Caucasians tested anonymously remained stable between 1988 and 1990, inclusive, with an average annual rate of 2.8%. From 1991 to 1994, the seroprevalence declined from 1.7% to 0.5%. The rates for 1995, 1996, 1997 and 1998 were low (0.8%, 1.0%, 0.6% and 0.6%, respectively).

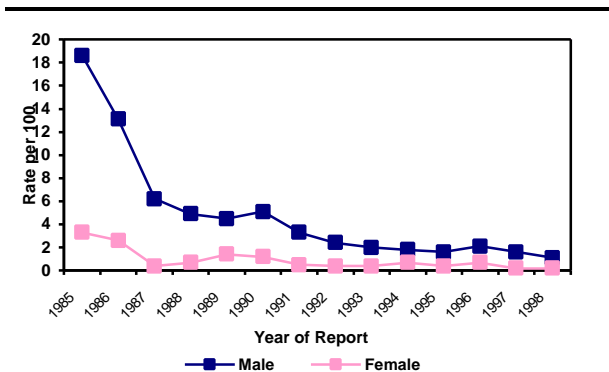


**FIGURE 20. Annual HIV seroprevalence by selected racial/ethnic groups among those presenting to anonymous test sites, San Bernardino County, April 1988-December 31, 1998**

The seroprevalence among African Americans tested anonymously increased from 2.3% in 1988 to 6.8% in 1990. Between 1990 and 1993, inclusive, the seroprevalence declined from 6.8% to 1.4%. This rate remained relatively stable from 1993 to 1996. In 1997, the rate increased to 2.6% but decreased to 0.8% in 1998.

The seroprevalence among Latinos tested anonymously peaked at 4.8% in 1989. This was followed by a gradual decline to 0.9% in 1995. Between 1996 and December 31, 1998, the seroprevalence among Latinos remained stable (1.1%, 1.3% and 1.3%, respectively).

The seroprevalence among Asian/Pacific Islanders tested anonymously declined from 7.4% in 1988 to 0.0% in 1990. It is essential to recognize that



**FIGURE 21. Annual HIV seroprevalence by gender among those presenting to anonymous test sites, San Bernardino County, June 1, 1985-December 31, 1998**

during that three year interval, only 101 persons tested self-identified as Asian/Pacific Islander. The average annual seroprevalence for Asian/Pacific Islanders between 1991 and 1997, inclusive, was 0.6%. In 1998, no new infections were identified among Asian/Pacific Islanders. The actual number of infections identified among Asian/Pacific Islanders has yet to exceed two per year.

Figure 21 shows that there was a dramatic decline in seroprevalence among males between 1985 (18.6%) and 1987 (6.2%). This is probably due to the fact that many of the men with the greatest risk for HIV disease presented for testing in 1985 and 1986. It is noteworthy that the HIV antibody test became widely available in the middle of 1985. Between 1988 and 1990, inclusive, the average annual seroprevalence among males was 4.8%. Between 1991 and June 30, 1997, inclusive, the average annual seroprevalence among males was 1.7%. Between July 1, 1997 and December 31, 1998 the average annual seroprevalence declined to 1.1%. While this is interesting, it does not provide the basis for optimism without an

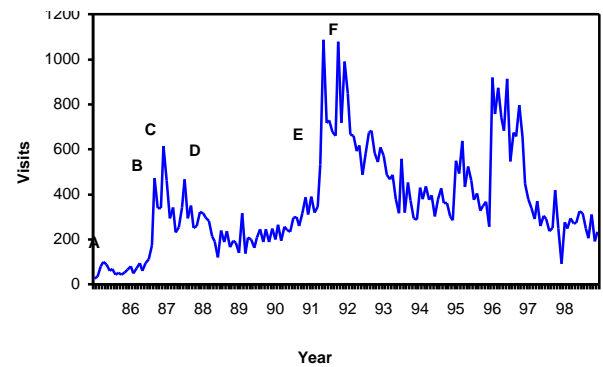
assessment of the actual number of infections that were identified. For example, between 1985 and 1987, inclusive, the average annual number of infections identified among males was 93.3 (standard deviation=43.7). Between 1990 and 1993, inclusive, the average annual number of infections identified among men was 84.0 (standard deviation=17.1). While the variability has declined, there has been a significant reduction in the average annual number of infections identified among men. From 1996 and through 1998, the number of infections among men who were tested anonymously were 29, 29 and 17, respectively.

inclusive, the average annual seroprevalence among women was 0.7%. Between July 1, 1997 and December 31, 1998, the average annual seroprevalence among women declined to 0.3%. The average annual number of infections identified among women between 1985 and 1987, inclusive, was 5.3 (standard deviation=3.5). The average annual number of infections identified among women between 1990 and 1993, inclusive, was 13.8 (standard deviation=1.7). From 1996 through 1998, the number of infections among women who were tested anonymously were 7, 6 and 3, respectively.

A number of events are believed to have influenced people's decision to seek anonymous HIV antibody testing. Figure 22 shows increased demand for testing when (A) Rock Hudson died in October 1985; (B) Liberace died in February 1987; (C) Paul Gann announced his transfusion associated infection in June 1987; (D) federal officials announced an aggressive media campaign on AIDS prevention in January 1988; (E) October was declared as AIDS awareness month in October 1991; and (F) Magic Johnson disclosed his HIV antibody status in November 1991.

## Confidential HIV Testing Programs

In 1985, the San Bernardino County Department of Public Health established a confidential HIV antibody testing program within its sexually transmitted disease (STD) clinics. Confidential testing is offered in the cities of San Bernardino, Chino, Barstow and Hesperia. Service includes an explanation of the test procedure and interpretation of the results; recording of demographic variables and risk assessment;



**FIGURE 22. Anonymous HIV antibody tests by month, San Bernardino County, June 1, 1985-December 31, 1998**

Between 1985 and 1987, inclusive, the seroprevalence among females declined from 3.3% to 0.4%. Between 1988 and June 30, 1997, provision of information on HIV transmission, prevention, and strategies for behavior change; development of a risk reduction plan; collection of a laboratory specimen; and distribution of condoms and educational materials. All individuals who test positive are offered medical evaluation and support services through the AIDS Program's HIV clinics or they are encouraged to seek care through the private medical community.

Between January 1, 1998 and December 31, 1998, 3,574 specimens were tested confidentially. Of those, five (0.1%) were found to have serologic evidence of HIV infection. It is important to recognize that those individuals found to have positive test results represent HIV infections and not necessarily cases of AIDS. The total number tested by the AIDS Program since March 1989 is 47,676.

**TABLE 48. Confidential HIV antibody test results by race/ethnicity, San Bernardino County, March 1, 1989–December 31, 1998**

Race/Ethnicity	Positive	Tested	Rate/100
Native American	1	185	0.5
African American	58	10,948	0.5
Caucasian	74	17,155	0.4
Latino	69	16,713	0.4
Asian/Pacific Islander	1	1,296	0.1
Other/Unknown	4	1,379	0.3
<b>Total</b>	<b>207</b>	<b>47,676</b>	<b>0.4</b>

Table 48 shows that the racial/ethnic distribution of those tested confidentially is 36% Caucasian, 35% Latino, 23% African American, 3% Asian/Pacific Islander, <1% Native American and 3% were classified as "other or unknown". The over representation among people of color when compared with the anonymous testing program reflects current utilization patterns in the Sexually Transmitted Disease (STD) clinics offered by the

Department of Public Health. It is important to recognize that those presenting to the STD Clinic are not expected to be representative of the general population.

Table 49 indicates that sex between men, IDU alone, or sex between men in addition to IDU were associated with 131 (63%) of the 207

infections identified during the entire period of this program. It is interesting that 25 (12%) of the infections were associated with no identifiable risk factor according to the initial interview. This might reflect some reluctance to acknowledge risk behaviors among those presenting for confidential

**TABLE 49 Confidential HIV antibody test results by risk factor, San Bernardino County, March 1, 1989-December 31, 1998\***

Risk Factor	# Positive	# Tested	Rate/100
Sex between men/IDU	8	88	9.1
Sex between men	86	1,071	8.0
Parent at risk	1	32	3.1
Injection drug use	37	2,318	1.6
Transfusion	2	732	0.3
Sex partner of a high risk individual	23	12,491	0.2
Heterosexual with multiple partners	25	19,564	0.1
Occupational exposure	0	232	0.0
Prostitute	0	44	0.0
Receipt of factor concentrate	0	5	0.0
No risk stated	12	6,615	0.2
Unknown	13	4,484	0.3
<b>Total</b>	<b>207</b>	<b>47,676</b>	<b>0.4</b>

\*A data collection system similar to that of the anonymous HIV testing program was implemented on March 1, 1989. Previously, confidential HIV testing was offered in San Bernardino County but the data describing same are not available in the current form.

testing. In 1998, the seroprevalence for the anonymous testing program was 3.5 times that of the confidential testing program. While this difference could suggest some selection bias with respect to testing format based upon perceived risk for HIV infection and ensuring the need for anonymity, it probably indicates that those seeking treatment for STDs do not share the same risk for HIV as those presenting for anonymous testing. This latter hypothesis is supported by the fact that the seroprevalence rates for men who have sex with men and injection drug users are similar regardless of the testing format.

**TABLE 50. Confidential HIV antibody test results by race/ethnicity, San Bernardino County drug treatment centers, March 1, 1989-December 31, 1998**

Race/Ethnicity	Positive	Tested	Rate/100
Asian/Pacific Islander	1	45	2.2
African American	28	1,465	1.9
Latino	20	2,611	0.8
Native American	1	122	0.8
Caucasian	34	6,835	0.5
Other/Unknown	4	286	1.4
<b>Total</b>	<b>88</b>	<b>11,364</b>	<b>0.8</b>

The San Bernardino Department of Behavioral Health, Office of Alcohol and Drug Programs established a confidential HIV antibody testing program in 1989. Confidential testing is offered in methadone treatment clinics in San Bernardino and Montclair and other drug treatment facilities throughout the county. Service includes an explanation of the test procedure and meaning of the results; recording of demographic variables and risk assessment; the provision of information

on HIV transmission, prevention, and strategies for behavior change; development of a risk reduction plan; collection of a laboratory specimen; and distribution of condoms and educational materials.

One thousand one hundred ninety-eight clients were tested confidentially in methadone and other

drug treatment clinics between January 1, 1998 and December 31, 1998. Of those, five (0.4%) were found to have serologic evidence of HIV infection. The total number tested by the Office of Alcohol and Drug Programs since September 1989 is 11,364.

The data in table 50 indicate that of those enrolled in methadone and other drug treatment programs who consented to be tested confidentially, 60% were Caucasian, 23% were Latino, 13% were African American, 1% were Native American, <1% were Asian/Pacific Islander and 3% were classified as "other or unknown". It must be recognized that persons enrolled in methadone maintenance, detoxification, and other drug treatment programs are not expected to be representative of the general population, nor are they necessarily representative of the total population of IDUs or those with significant non-IDU problems.

Table 51 indicates that among those tested confidentially in drug treatment centers during the

entire period of this program, 74 (84%) of the 88 infections identified were associated with injection drug use, sex between men or both.

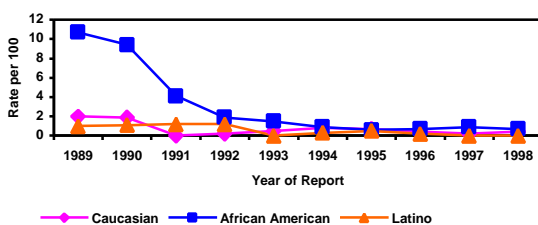
Figure 23 indicates relatively low rates of infection among Caucasians and Latinos enrolled in methadone and other drug treatment programs when compared with African

Americans. It is recognized that this population is highly self-selected and that the annual number tested is relatively small (0=1,136). The decline in seroprevalence in 1991 is probably due to the expansion of service to those enrolled in treatment for non-IDU. While non-IDU can clearly compromise one's

**TABLE 51. Confidential HIV antibody test results by risk factor, San Bernardino County drug treatment centers, March 1, 1989-December 31, 1998**

Risk Factor	# Positive	# Tested	Rate/100
Sex between men/IDU	8	167	4.8
Sex between men	7	183	3.8
Injection drug use	59	5,129	1.2
Heterosexual with multiple partners	4	1,232	0.3
Prostitute	2	962	0.2
Sex partner of a high risk individual	5	2,947	0.2
Occupational exposure	0	64	0.0
Parent at risk	0	2	0.0
Transfusion	0	208	0.0
No risk stated	1	95	1.1
Unknown	2	375	0.5
<b>Total</b>	<b>88</b>	<b>11,364</b>	<b>0.8</b>

judgement with regard to practicing safer sex, this behavior is not comparable to the level of risk for HIV associated with injection drug use. Regardless, the seroprevalence rate (0.8%) among those enrolled in drug treatment programs when compared with estimates for those of the general population (0.4%-0.6%) supports the need for effective outreach and referral for all of those enrolled in methadone and other drug treatment programs.



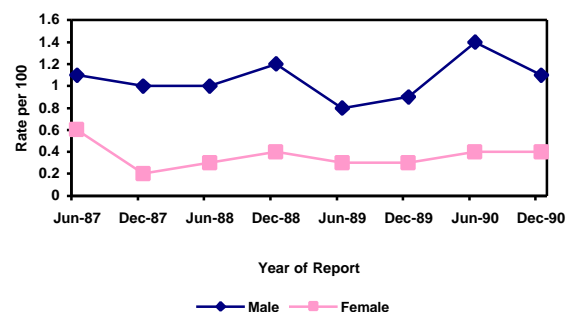
**FIGURE 23. Annual HIV seroprevalence by selected racial/ethnic groups among those presenting to confidential test sites, San Bernardino County drug treatment centers, September 1, 1989-December 31, 1998**

## Blinded HIV Testing Programs Survey of County Clinic Clients

In January 1987, the AIDS Program initiated a blinded seroprevalence study to measure rates and monitor trends of HIV infection among those who attended public health clinics or were incarcerated

in San Bernardino County jails but who elected not to be tested anonymously or confidentially. Since no written or informed consent was obtained to test for antibodies to HIV, specimens collected for purposes of this study were stripped of identifiers with the exception of age, gender and the clinic or facility from which the specimen was submitted. Between January 1, 1987 and March 31, 1991, inclusive, 56,734 specimens were collected. Four hundred and forty-two (0.8%) were reported as positive.

Table 52 indicates that 425 (96%) of the 442 infections identified in this study were submitted from the STD Clinic and detention centers. From these data, it would seem important that patients presenting for evaluation for STDs and those incarcerated in county facilities be encouraged to test for HIV either anonymously or confidentially. It is noteworthy that current laws prohibit anonymous testing in jails or prisons.



**FIGURE 24. HIV seroprevalence by gender by six month interval, blinded specimens, San Bernardino**

**TABLE 52. HIV antibody test results by clinic, blinded specimens, San Bernardino County, January 1, 1987-March 31, 1991**

Clinic	Positive	Tested	Rate/100
STD	258	24,393	1.1
Detention centers	167	20,202	0.8
Premarital testing	7	4,288	0.2
Women's Health	9	7,446	0.1

The average annual seroprevalence among females tested blindly was lower (mean=0.4%, standard deviation=0.1%) and showed less variability than that for males. These data are interesting in that the rate of infection among males exceeds that among females by a factor of only 2.8 yet the male to female ratio of community AIDS cases is 5.7:1. These data are important in that they suggest that many persons utilizing STD clinic services do not perceive themselves to be at risk for HIV or are unfamiliar with the benefits of testing and early medical intervention. However, since the majority of infections were identified from two sources, the trends in seroprevalence by gender were essentially flat, resources for testing were limited and there was no method by which to identify and refer the infected individuals identified in this manner for medical care, this blinded study was discontinued effective March 31, 1991.

### Survey of Childbearing Women

In 1988, the California Department of Health Services, Office of AIDS implemented a blind seroprevalence study among neonates. The purpose of this study was to provide an estimate of the prevalence of HIV infection among childbearing women in California. Specimens were collected from neonates born in hospitals during the third quarter of each calendar year.

**TABLE 53. HIV antibody test results, survey of childbearing women, San Bernardino County, 1988-1995**

Year	Positive	Tested	Rate/10,000
1988	2	6,991	2.9
1989	3	7,511	4.0
1990	3	7,993	3.8
1991	5	8,329	6.0
1992	2	8,112	2.5
1993	4	8,118	4.9
1994	6	7,603	7.9
1995	5	7,582	6.6
<b>Total</b>	<b>30</b>	<b>62,239</b>	<b>4.8</b>

The specimens were stripped of identifiers other than the mother's age and race/ethnicity and then tested for antibodies to HIV. The data presented in table 53 indicate that very few infants in San Bernardino County were born to HIV-infected

Other	1	405	0.2
<b>Total</b>	<b>442</b>	<b>56,734</b>	<b>0.8</b>

Figure 24 shows that the seroprevalence rate among males tested blindly remained remarkably stable between January 1987 and December 1990, inclusive (mean=1.1%, standard deviation=0.2%). women. It is important to recognize that approximately 25% of children born to mothers with serologic evidence of HIV infection actually have the infection. The remaining 75% represent children with maternal HIV antibodies only. In 1995, 15 counties within California identified between 1 and 40 maternal infections. Among these 15 counties, San Bernardino County had the eighth lowest seroprevalence (0.7%).

### HIV Screening Programs

#### Blood Bank of San Bernardino and Riverside Counties

Table 54 shows that the seroprevalence among blood donors is very low. All HIV-infected people identified in this screening program did not self-exclude from donation on the basis of behaviors known to place them at increased risk for HIV. All 84 infections have been subsequently associated with well recognized risk behaviors. Since many of the units collected represent repeat donors who would have been denied the opportunity to give blood had they acknowledged behaviors which placed them at risk for HIV infection, this screening program offers an excellent form of sentinel surveillance to identify new or unusual routes of transmission. To date, none have been identified.

**TABLE 54. HIV antibody screening program, Blood Bank of San Bernardino and Riverside Counties, June 1, 1985-December 31, 1998**

Year	Positive	Tested	Rate/10,000
1985	5	35,998	1.4
1986	10	67,591	1.5
1987	10	74,720	1.3
1988	12	75,701	1.6
1989	5	81,168	0.6
1990	10	77,289	1.3
1991	9	82,645	1.1
1992	7	84,145	0.8
1993	4	78,466	0.5
1994	1	79,108	0.1
1995	1	78,744	0.1
1996	5	81,298	0.6
1997	1	82,467	0.1
1998	4	82,516	0.5
<b>Total</b>	<b>84</b>	<b>1,061,856</b>	<b>0.8</b>

### Military Recruits

The United States Department of Defense began routinely testing military recruits in 1985. The data in table 55 show very low annual seroprevalence rates among recruits from the Riverside-San Bernardino standard metropolitan statistical area (SMSA). The cumulative San Bernardino Counties SMSA ranks 5th highest among 14 SMSAs surveyed within California in 1995.

**TABLE 55. HIV antibody screening program, United States Department of Defense, Riverside-San Bernardino Standard Metropolitan Statistical Area, 1985-1995**

Year	Positive	Tested	Rate/1,000
1985	1	917	1.1
1986	4	3,891	1.0
1987	3	3,736	0.8
1988	3	3,897	0.8
1989	6	4,202	1.4
1990	0	3,562	0.0
1991	2	3,493	0.6
1992	2	3,249	0.1
1993	2	3,386	0.1
1994	0	3,509	0.0
1995	3	3,811	0.1
<b>Total</b>	<b>26</b>	<b>37,653</b>	<b>0.7</b>

## Comparison of Testing/Screening Programs

Tables 56 and 57 were prepared to evaluate HIV antibody test results by program and study population using a standard sample (n=10,000) as the denominator. Table 56 indicates that the rate of infection is highest among those presenting to the Department of Public Health for anonymous testing and lowest among those presenting to the Blood Bank of San Bernardino/Riverside Counties.

seroprevalence for this group is substantially lower than those of the anonymous, confidential, and blinded programs conducted by the Department of Public Health. It is also lower than the confidential program conducted by the Office of Alcohol and Drug programs. The Riverside-Table 57 stratifies the test results by study population and indicates that those with the highest risk are men who have sex with men and men who have sex with men in addition to IDU who present to the Department of Public Health for anonymous or confidential testing. The second tier of risk includes men who have sex with men and men who have sex with men in addition to IDU who present to the Office of Alcohol and Drug Programs for anonymous or confidential testing. The third stratum includes persons whose only acknowledged risk is IDU and present to the Department of Public Health or the Office of Alcohol and Drug Programs. The fourth tier includes STD Clinic patients and the incarcerated who were tested in a blinded format and sex partners of high risk individuals who present to the Department of Public Health for anonymous testing.

The remaining group largely represents persons with no acknowledged risk other than histories of unprotected heterosexual contact. It is relevant that the seroprevalence among the highest risk group exceeds that of the lowest (blood donors) by a factor of 2,059. Again, these findings support the utility of the counseling and testing of persons

**TABLE 56. HIV antibody test results by program and interval of study, San Bernardino County, 1985-1998**

Testing Program	Interval of Study	# Positive	# Tested	Rate/10,000
Anonymous - Public Health	Jun 1, 1985 - Dec 31, 1998	1,044	55,133	189.4
Blinded - Public Health	Jan 1, 1987 - Mar 31, 1991	442	56,734	77.9
Confidential - Office of Alcohol and Drug Programs	Mar 1, 1989 - Dec 31, 1998	88	11,364	77.4
Confidential - Public Health	Mar 1, 1989 - Dec 31, 1998	207	47,676	43.4
Military Recruits - US Dept of Defense	1985-1995	26	37,653	6.9
Childbearing Women - CA Dept of Health Services	1988-1995	30	62,239	4.8
Blood Bank - San Bernardino/Riverside Counties	Jun 1, 1985 - Dec 31, 1998	84	1,061,856	0.8

**TABLE 57. HIV antibody test results by program and study population, San Bernardino County, 1985-December 31, 1998**

Testing Program	Population	# Positive	# Tested	Rate/10,000
Anonymous - Public Health	Sex between men/IDU	70	425	1,647.1
Anonymous - Public Health	Sex between men	644	6,936	928.5
Confidential - Public Health	Sex between men/IDU	8	88	909.1
Confidential - Public Health	Sex between men	86	1,071	803.0
Confidential - Office of Alcohol and Drug Programs	Sex between men/IDU	8	167	479.0
Confidential - Office of Alcohol and Drug Programs	Sex between men	7	183	382.5
Anonymous - Public Health	Injection drug use	85	3,809	223.2
Confidential - Public Health	Injection drug use	37	2,318	159.6
Confidential - Office of Alcohol and Drug Programs	Injection drug use	59	5,129	115.0
Blinded - Public Health	STD clinic clients	258	24,393	105.8
Blinded - Public Health	Incarcerated	167	20,202	82.7
Anonymous - Public Health	Sex partner of a high risk individual	128	16,575	77.2
Confidential - Office of Alcohol and Drug Programs	Heterosexual with multiple partners	4	1,232	32.5

Anonymous - Public Health	Heterosexual with multiple partners	54	18,783	28.7
Confidential - Public Health	Sex partner of a high risk individual	23	12,491	18.4
Confidential - Office of Alcohol and Drug Programs	Sex partner of a high risk individual	5	2,947	17.0
Confidential - Public Health	Heterosexual with multiple partners	25	19,564	12.8
Blinded - Public Health	Women's health clients	9	7,446	12.1
Confidential - US Dept of Defense	Military recruits	26	37,653	6.9
Blinded - CA Dept of Health Services	Childbearing women	30	62,239	4.8
Confidential - Blood Bank of San Bdn/Riv Counties	Blood donors	84	1,061,856	0.8

who engage in well-recognized behaviors that place them at increased risk for HIV as well as persons with little or no risk who donate blood on a regular basis.

### Diseases/Conditions of Possible Relevance to the HIV Epidemic

Table 58 indicates that there has been an annual decline in gonorrhea between 1990 and 1996, inclusive. The increase in 1997 and the fact that the number of cases reported in 1998 exceeded that for 1996 is of considerable concern to the Department of Public Health. Early syphilis and acute hepatitis B began to decline in 1990 and 1991, respectively. Since chlamydial infections were only made reportable in California in 1989, one should attribute the dramatic rise between 1989 and 1991, inclusive, to recognition and increasing familiarity with reporting requirements. The increase in cases of *Chlamydia trachomatis* between 1996 and 1998, inclusive, is also of considerable concern to the Department of Public Health. The observed declines in sexually and parenterally transmitted diseases is consistent with findings reported elsewhere in the United States. It is not surprising that these diseases with relatively short incubation periods declined in the face of prevention education efforts attendant to the HIV epidemic. Tuberculosis, on the other hand, made a resurgence throughout the United States in the early 1990s. This increase was due to a number of factors including, but not limited to, the HIV epidemic, poverty, overcrowding, homelessness, the number of foreign-born persons residing within the United States, insufficient disease control funding at the local level, and the emergence of multi-drug resistant (MDR) strains of *Mycobacterium tuberculosis*. In 1994, tuberculosis began to decline in San Bernardino County. To date, 51 (2%) of the 2,110 community cases and 57 (15%) of the 393 institutional cases have been diagnosed with active pulmonary

tuberculosis. The number of live births among teenagers increased between 1988 and 1994, inclusive, while the number of teen abortions remained essentially the same. Live births to teens decreased by 1% in 1995 and 4% in 1996. Teen abortions decreased by 10% in 1995 and 9% in 1996. The reason for the increase between 1988 and 1994, inclusive, and subsequent decline in 1995 and 1996 in the number of live births among teenagers is complex. There are anecdotal reports of an increased desire among teens to become pregnant and documented evidence of increased sexual activity among very young teens. Regardless, the number of teen pregnancies suggests the continued opportunity for exposure to HIV through unprotected sex.

### Housing

Riverside and San Bernardino Counties became eligible for United States Department of Housing and Urban Development (HUD), Housing Opportunities for Persons with AIDS (HOPWA) funds in 1993. The City of Riverside was named as grantee by HUD because it had the largest population of any city within the two-county region. The housing authorities in the respective counties agreed to serve as project sponsors. The City of Riverside convened an advisory committee to assist in the planning of the method by which HOPWA funds would be distributed and the service categories that would be funded. Initial services for San Bernardino County residents living with HIV included housing and utilities assistance, case management, home health care and outpatient primary medical care.

In late 1993, Riverside and San Bernardino counties became eligible for Title I funds under the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act of 1990. These funds were able to sufficiently support case management, home health care and primary such



**TABLE 58. Other diseases/conditions of possible relevance to the HIV epidemic, San Bernardino County, 1988-1998**

Disease/Condition	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gonorrhea	2,408	3,455	2,259	1,948	1,314	1,366	1,149	944	824	936	895
1E & 2E Syphilis	178	172	196	110	38	20	14	26	8	8	7
<i>C. trachomatis</i>	1,116	2,036	2,884	3,636	3,147	3,739	3,513	2,996	2,853	3,561	4,386
Hepatitis B (acute)	184	116	123	96	107	103	86	87	46	37	27
Tuberculosis	88	96	115	137	125	151	137	128	131	130	101
Live births to teens	3,779	4,027	4,495	4,591	4,539	4,633	4,630	4,570	4,383	--	--
Teen abortions*	1,086	1,096	1,049	1,079	1,055	1,138	1,049	942	856	--	--

\*Medi-Cal funded abortions only

medical care in San Bernardino County that all of the HOPWA funds could be used for housing acquisition, rehabilitation and development as well as housing and utilities assistance.

Between 1993 and 1997, inclusive, there were a number of delays in executing contracts for HOPWA-related services. On February 14, 1997, the City of Riverside named the Department of Public Health in San Bernardino as the project sponsor for San Bernardino County effective April 1, 1997.

Three hundred and forty-eight persons living with HIV/AIDS received HOPWA benefits between April 1, 1997 and December 31, 1998. According to the San Bernardino County AIDS case registry, there were 875 persons living with AIDS in San Bernardino County as of December 31, 1998 (see table 14).

**TABLE 59. HOPWA beneficiaries by age group and gender, San Bernardino County, April 1, 1997-December 31, 1998**

Age	Male	Female	Total	Row %
#17	2	2	4	1%
18-30	38	20	58	17%
31-50	206	55	261	75%
51+	20	4	24	7%
Unknown	1	0	1	<1%
<b>Total</b>	<b>267</b>	<b>81</b>	<b>348</b>	<b>100%</b>
Column %	77%	23%		

**TABLE 60. HOPWA beneficiaries by race/ethnicity, San Bernardino County, April 1, 1997-December 31, 1998**

Race/Ethnicity	Number	Row %
Caucasian	152	44%
African American	102	29%
Hispanic	89	26%
Asian/Pacific Islander	3	1%
Native American or Alaskan Native	2	1%
<b>Total</b>	<b>348</b>	<b>100%</b>

Those receiving assistance under HOPWA are not representative of those living with AIDS in San Bernardino County in terms of age or gender (see table 59). Persons under the age of 30 constitute 18% of the HOPWA recipients but 23% of the 875 persons living with AIDS. This observation

is somewhat surprising in that younger people tend to be over represented among those living in poverty. Persons aged 31 to 50 comprise 75% of the HOPWA beneficiaries compared to 69% of those living with AIDS. The proportion of HOPWA recipients 51 years of age or older is comparable to that of those living with AIDS.

Females constitute 17% of those living with AIDS but 23% of those receiving assistance under HOPWA. This observation is, in all likelihood, due to the fact that women are over represented among those living in poverty in the United States.

The proportions of Caucasians (44%), Hispanics (26%), Asian/Pacific Islanders (1%) and Native Americans (1%) receiving HOPWA benefits (see table 60) are comparable to the corresponding proportions (46%, 29%, 1% and 1%, respectively) living with AIDS in San Bernardino County. Persons of African descent constitute 29% of the HOPWA beneficiaries and 22% of persons living with AIDS. This observation is probably due to the fact that African Americans are over represented among those living in poverty within the United States.

The 1989 median household income for San Bernardino County residents was \$36,977. The data presented in table 61 indicate that \$501-\$1,000 per month was the most frequently reported income (n=227) among the HOPWA beneficiaries. The average annual income among the HOPWA recipients in San Bernardino County was \$8,032 with a range of \$0 to \$33,600 and a median of \$7,684.50. Forty-two (12%) of the 348 had no income at all.

**TABLE 62. HOPWA beneficiaries by recent living situation, San Bernardino County, April 1, 1997-December 31, 1998**

	Number	Row %
Homeless	44	13%
Rental Assistance	217	62%
Utilities Assistance	87	25%



<b>Total</b>	<b>348</b>	<b>100%</b>
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One of the stated goals of HOPWA is to prevent homelessness. Homelessness was a documented problem for 44 (13%) of the 348 who received benefits (see table 62). These individuals were placed in hotels/motels on an emergency basis

**TABLE 61. HOPWA beneficiaries by monthly income, San Bernardino County, April 1, 1997-December 31, 1998**

	\$0-250	\$251-500	\$501-1,000	\$1,001-1,500	\$1,501-2,000	\$2,001+
Number	53	25	227	29	10	4
Column %	15%	7%	65%	8%	3%	1%

One hundred and sixty-two (47%) of the 348 shared their residence with one or more persons. The data presented in table 63 suggest that a substantial number of persons who were not necessarily living with HIV or eligible for this program benefited from the housing and utility assistance provided through HOPWA. The average household size for those who lived with others was 3.0 persons.

**TABLE 63. Number of persons assisted by HOPWA, San Bernardino County, April 1, 1997-December 31, 1998**

Number of persons with HIV/AIDS	348
Number of others who shared living quarters	324
<b>Total</b>	<b>672</b>

The data presented in table 64 indicate that 655.1 (84%) of the 781.1 units of housing and utilities assistance were provided to those residing in one or two bedroom or single room occupancy (SRO) dwellings. This presumably reflects the fact that most recipients of HOPWA benefits are either living in apartments or relatively small homes.

**TABLE 64. Units (months) of service by type of assistance and number of bedrooms, April 1, 1997-December 31, 1998**

# of Bedrooms	SRO	1	3	4	5+	Total	
Rental Assist.	32.0*	174.0	146.5	50.0	10.25	1.5	<b>414.25</b>
Utilities Assist.		124.0	178.6	58.5	4.0	1.75	<b>366.85</b>
<b>Total</b>	<b>32.0</b>	<b>298.0</b>	<b>325.1</b>	<b>108.5</b>	<b>14.25</b>	<b>3.25</b>	<b>781.10</b>
Column %	4%	38%	42%	14%	2%	<1%	

\* 961 days of hotel/motel assistance

There has been considerable discussion among the members of the Inland Empire HIV Planning Council regarding clients who seek services from more than one provider. While most of the discussions have focused on case management, table 65 provides some insight into the utilization of housing and utilities assistance.

Unduplicated clients are defined as those who have sought and received assistance from one provider while "shared" clients are those who have received assistance from more than one

because they had no other options for housing. These data do not measure the threat of homelessness. However, since the median annual income of those served was \$7,684.50, the threat of homelessness must be considered for at least half of this population.

provider. It is not known why some would seek service from more than one provider. Possible explanations include a change of residence from one agency's service area to that of another; limited cash flow on the part of a given provider; lack of confidence in the "system" on the part of consumers; or the exhaustion of benefits available through a given agency.

The data presented in table 65 indicate that 270 (78%) of the 348 who received housing and utility assistance between April 1, 1997 and December 31, 1998 obtained same from one service provider. The Inland AIDS Project served 171 (63%) of the unduplicated, non-shared clients, the Foothill AIDS Project assisted 39 (14%), Catholic Charities served 35 (13%) and the Desert AIDS Project served 25 (9%). Seventy-five (22%) of the 348 unduplicated clients obtained assistance from two providers and three (1%) clients received services from three providers (Catholic Charities, Foothill AIDS Project and Inland AIDS Project).

**TABLE 65. Unduplicated and "shared" HOPWA beneficiaries by service provider, San Bernardino County, April 1, 1997-December 31, 1998**

	Catholic Charities	Desert AIDS Project	Foothill AIDS Project	Inland AIDS Project	Total
Catholic Charities	35	1	4	46	<b>86</b>
Desert AIDS Project		25	0	2	<b>27</b>
Foothill AIDS Project			39	22	<b>61</b>
Inland AIDS Project				171	<b>171</b>

Seeking assistance from more than one provider was due, in all likelihood, to delays in the execution of contracts from the grantee to the project sponsor resulting in cash flow limitations. It has been reported that some provider agencies lacked the financial reserves to continue to offer assistance while others lacked confidence in the

stability of the HOPWA program itself. It is interesting to note that the Inland AIDS Project provided housing and utilities assistance to 171 unduplicated clients and to 73 (94%) of the 78 who sought service from two or more providers. This level of service speaks to that agency's capacity and its Board of Directors' commitment to provide housing and utility assistance during times of uncertain funding.

**TABLE 66 Actual expenditures by type of assistance, San Bernardino County, April 1, 1997-December 31, 1997**

Type of Assistance	HOPWA Funds	Row %
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## Prevention Education

The San Bernardino County Department of Public Health provides a comprehensive prevention program which consists of both primary and secondary prevention efforts. Current activities include, but are not limited to: development of a comprehensive prevention plan; one-to-one street outreach for men who have sex with men, injection drug users and their sex partners, at risk youth and sex industry workers; group presentations for men who have sex with men, sex industry workers and the general public; assessment of individual knowledge of HIV among clients enrolled in the San Bernardino County HIV clinics; the provision of behavior change support classes for those living with or at risk of HIV; recruitment of peer educators from target populations; the provision of risk reduction workshops for men who have sex with men; the establishment and maintenance of "safe dating" programs for men who have sex with men; the provision of training for counselors working in drug recovery or rehabilitation facilities; participation in community health fairs and AIDS-related events (eg, Riverside/San Bernardino Pride Festival, Inland AIDS Project's annual AIDS Walk for Riverside and San Bernardino Counties and World AIDS Day) and the development and implementation of local media campaigns.

The highest priority for targeted prevention education in San Bernardino County addresses men who have sex with men. Other target populations include injection drug users and their sex partners, sex industry workers and at risk youth. The Department of Public Health currently subcontracts with the Desert AIDS Project, Foothill AIDS Project and Inland AIDS Project to expand and enhance its prevention program.

Rental Assistance	\$230,553.72	86%
Utilities Assistance	37,877.74	14%
<b>Total</b>	<b>\$268,431.46</b>	

When the expenditure data presented in table 66 are compared with the units of service presented in table 64, the unit cost can be determined. The data indicate that the average direct service cost per unit of housing assistance per month was \$556.56 and that the average direct service cost per unit of utilities assistance was \$103.25.

## Conclusion

There is no cure for HIV disease at this time. In 1997, the president authorized \$17 million for the development of a vaccine. The new drug treatment regimens offer the potential for providing HIV-related care in the context of chronic disease management. Highly active antiretroviral therapy (HAART) might also reduce the likelihood of secondary HIV transmission by lowering patients' viral burden. It has also been shown that the early identification and treatment of STDs lowers the likelihood of HIV transmission.

History has shown that viral diseases can be controlled and even eliminated by vaccinating the susceptible population. Until an effective vaccine is developed, primary and secondary prevention education constitute the best "vaccine" available.

The age distribution, gender, race/ethnicity, city and county of residence, and risk profile of people with HIV/AIDS is clearly known. The most susceptible population consists of those who engage in well recognized risk behaviors associated with HIV transmission. Since the amount of funding available for the "vaccine" is limited in San Bernardino County, it is incumbent on prevention planners to "vaccinate" those with the greatest risk. These would include men who have sex with men; injection drug users and their sex partners; female sex partners of bisexual men; and infected women of childbearing age. Special efforts are indicated for the latter as available data suggest that the risk of perinatal transmission can be greatly reduced through appropriate medical intervention.